DRUG POLICY MODELLING PROGRAM

MONOGRAPH 23

PREVALENCE OF AND INTERVENTIONS FOR MENTAL HEALTH AND ALCOHOL AND OTHER DRUG PROBLEMS AMONGST THE GAY, LESBIAN, BISEXUAL AND TRANSGENDER COMMUNITY: A REVIEW OF THE LITERATURE

Alison Ritter, Francis Matthew-Simmons & Natacha Carragher

National Drug and Alcohol Research Centre

December 2012

Drug Policy Modelling Program Monograph Series

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The Drug Policy Modelling Program Monograph Series is funded by Colonial Foundation Trust.

Published by National Drug and Alcohol Research Centre.

December 2012

ISBN: 978 0 7334 3234 7

The correct citation for this publication is: Ritter, A., Matthew-Simmons, F., & Carragher, N. (2012). Monograph No. 23: Prevalence of and interventions for mental health and alcohol and other drug problems amongst the gay, lesbian, bisexual and transgender community: A review of the literature. *DPMP Monograph Series*. Sydney: National Drug and Alcohol Research Centre.

THE DRUG MODELLING POLICY PROGRAM

This monograph forms part of the Drug Policy Modelling Program (DPMP) Monograph Series.

Drugs are a major social problem and are inextricably linked to the major socio-economic issues of our time. Our current drug policies are inadequate and governments are not getting the best returns on their investment. There are a number of reasons why: there is a lack of evidence upon which to base policies; the evidence that does exist is not necessarily analysed and used in policy decision-making; we do not have adequate approaches or models to help policy-makers make good decisions about dealing with drug problems; and drug policy is a highly complicated and politicised arena.

The aim of the Drug Policy Modelling Program (DPMP) is to create valuable new drug policy insights, ideas and interventions that will allow Australia to respond with alacrity and success to illicit drug use. DPMP addresses drug policy using a comprehensive approach that includes consideration of law enforcement, prevention, treatment and harm reduction. The dynamic interaction between policy options is an essential component in understanding best investment in drug policy.

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DPMP strives to generate new policies, new ways of making policy and new policy activity and evaluation. Ultimately our program of work aims to generate effective new illicit drug policy in Australia. I hope this Monograph contributes to Australian drug policy and that you find it informative and useful.

Alison Ritter

Director, DPMP

ACKNOWLEDGEMENTS

This project was funded by the NSW Ministry of Health, Mental Health and Drug and Alcohol Office.

We received significant support from ACON in undertaking this work. This included talking with us about GLBT issues and preparing the list of GLBT services in NSW (Appendix A). Angela Matheson, Alan Brotherton, and Nic Parkhill were all exceptionally helpful. In addition, we were invited to a Public Forum, held by ACON (July 2011) where a diverse group of GLBT consumers of alcohol and other drug services talked about their experiences and personal reflections. This was an invaluable learning experience for us, and we are very grateful to the individuals who talked through their stories on the day. We also presented preliminary findings at the ACON in-service 'big day in' (Dec 2011) and received extremely useful comments from the delegates which shaped our understanding of the literature.

Prof Louisa Degenhardt and Amanda Roxburgh very kindly provided us with access to unpublished analysis that they had completed on the NDSHS. This is included in Table 17. We thank them for making these analyses available to us. Nicholas Mabbitt and Colleen Faes assisted with editorial and Endnote referencing aspects of the report – making our task easier.

The draft report was peer-reviewed by three reviewers: Prof Louisa Degenhardt, Dr John Howard and Amanda Roxburgh. They all provided insightful comments and corrections, for which we were most grateful. Of course, we take full responsibility for the work and any remaining errors are our own.

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EXECUTIVE SUMMARY

This report summarises a vast literature in relation to gay, lesbian, bisexual and transgender (GLBT) people and both mental health and alcohol and other drug problems. Overall, we located more than 500 published papers. The report focuses on two aspects:

1. The prevalence of mental health (MH) disorders, and alcohol and other drug problems (AOD) among GLBT populations; and
2. Evidence regarding the effectiveness of interventions to redress MH and AOD problems amongst GLBT groups.

Prior to summarising the findings, we highlight some methodological constraints of the extant literature. Firstly, how sexual orientation is defined and measured varies considerably, and the terminology used to describe these populations also varies. Here we have chosen the acronym GLBT (gay, lesbian, bisexual and transgender). Other acronyms may include I (intersex) and Q (queer). In addition, the existing research literature on transgender populations in particular is relatively small, and although transgender is included in the acronym used in this report, much of the literature does not explicitly include transgender individuals in the samples.

The ways in which sexuality or sexual identity is defined and classified includes: self-identification (as gay, lesbian, bisexual etc.); through same sex attraction; or through same sex behaviour. Each of these definitions may identify different people, depending on how the questions are asked, and how respondents view their own sexual identity. Other terms, such as "men who have sex with men" (MSM) are also used in the literature. Because the terms and coverage vary between studies, not all studies can be directly compared in terms of prevalence or treatment effectiveness.

The second methodological constraint concerns the epidemiological literature. We chose to focus more on those studies that used recognised diagnoses (e.g. anxiety disorder, major depression, drug dependence) rather than other indicators of mental health or drug use. This is because many people may experience symptoms of mental health problems, or consume alcohol and other drugs, but this alone may not result in significant harm or impairment. The GLBT community is known to consume some substances at higher rates than heterosexual groups – we are not exceedingly concerned with this; rather the focus of this report is on harmful or problematic alcohol or drug use. Hence our attention to those studies that used diagnostic criteria, as the best available measure of problems.

As the report is concerned with the extent to which the GLBT population experiences problems at a higher rate than non-GLBT population, we have also focussed to a greater extent on those studies that have included a non-GLBT comparison group. Unfortunately, in the main these studies come from the United States, with only a small handful of studies from other countries. Therefore, many of the conclusions that are made within this report are based in large part on U.S. data. This does not necessarily invalidate the findings of this report, but is an important limitation. It is possible that the GLBT population in the United States exhibits different characteristics from that in Australia, or in other nations. Certainly, each nation has differing characteristics related to the epidemiology of drug use, which may influence the results. We have separately reviewed the Australian literature on prevalence rates, but as will be seen, at this point there are no published studies using diagnostic criteria (for mental health or drug use disorders) from an Australian population sample, aside from the original work we present herein.

Key findings in relation to prevalence of mental health disorders amongst GLBT

A majority of international and Australian studies have found that GLBT populations suffer from mental health disorders at a significantly higher rate than the heterosexual population. This finding occurs across both genders, and in both youth and adult populations.

- In terms of anxiety disorders, the international literature (n=12 studies with a non-GLBT comparison group) demonstrates that GLBT people are more than twice as likely to have anxiety disorders. The majority of these studies find significantly higher rates in lesbian/bisexual women (with somewhat less strong findings for males). Australian studies provide less strong evidence, especially for lesbian and bisexual women, where anxiety disorders may be less common than in heterosexual groups.
- In terms of depression and mood disorders, 14 of the 18 international studies examined here demonstrated higher rates amongst GLBT populations than heterosexual populations. This applied to both gay or bisexual men and lesbian or bisexual women, although the highest rates of depression were found for lesbian/bisexual women. Australian research confirms significantly higher rates of major depressive disorder in GLBT compared with non GLBT populations.
- The evidence regarding suicidality examined here provides perhaps the clearest indication of increased risk amongst GLBT individuals. 25 of 28 international studies found a significantly higher prevalence of past suicide attempts among a GLBT population. Australian data on suicidality confirms that GLBT groups have elevated rates of suicidal thoughts, plans and attempts relative to heterosexual groups.

Key findings in relation to prevalence of AOD disorders amongst GLBT

Whether examining the prevalence or frequency of alcohol or other drug use, or the presence of diagnosed alcohol or other drug use disorders, the research indicates that GLBT individuals are likely to be at greater risk.

- In relation to tobacco, 12 of 15 international studies found significantly higher rates of tobacco use among GLBT populations. A number of studies showed that bisexuals in particular (of both sexes) had the highest rates of tobacco use. The limited Australian research also suggests a higher prevalence among GLBT.
- In relation to alcohol, in the international literature, 9 of 13 population studies found significantly higher rates of alcohol use disorders among GLBT populations. However, when studies divided the sample by gender, few found a difference between heterosexual and non-heterosexual men, whereas differences between heterosexual and non-heterosexual women were more common. The highest rates of alcohol disorders were found in lesbian and bisexual women. Australian research has shown elevated rates of alcohol consumption, but non-significant differences in alcohol use disorders between GLBT and non GLBT.
- For illicit drugs, across both drug use and diagnosed drug use disorders, a majority of international studies showed significantly higher prevalence among GLBT compared to heterosexual populations. Particular sub-populations of gay/bisexual men are likely to use particular drugs to a greater extent. These drugs include stimulants such as methamphetamine, and also inhalants. Bisexual women appear to be the heaviest users of illicit drugs, notably cannabis. Australian research, using diagnosable drug use disorders

found higher rates of drug abuse and dependence in the GLBT group; however this difference was not statistically significant.

Risk factors

- A number of potential factors as to why GLBT individuals use alcohol and other drugs to a greater extent, or face higher rates of psychological disorders than the heterosexual population, have been identified.
- Many, but not all of these risk factors for psychological disorder (for instance, victimisation) can apply equally to GLBT and heterosexual groups. However in many cases these factors are experienced to a greater extent by the GLBT population. In addition, there are other risk factors which may apply exclusively to this population, such as homophobic abuse, or issues surrounding sexual orientation disclosure ("coming out").
- Factors that may account for higher mental health or alcohol and other drug problems include: self-identification; relationship status; relationships with family and friends; residential context; "coming out"; abuse and victimisation; and stigma, minority stress and discrimination. Many of these factors are likely to be inter-related; for example the process of "coming out" may have implications for relationships with family and friends.
- Each of these contributes towards further understanding the risk factors in the development of alcohol and other drug and/or mental health problems amongst GLBT populations.

Key findings in relation to intervention effectiveness amongst GLBT

- Prevention is a priority with GLBT people; both AOD and MH problems are preventable, and interventions such as supportive counselling during adolescence are likely to reduce the risk of later mental health or substance misuse problems. Social marketing campaigns directed towards healthy lifestyles for GLBT have not been sufficiently evaluated to draw conclusions about effectiveness.
- Preventing discrimination and stigma is an essential aspect of any comprehensive approach to reducing AOD and MH problems amongst GLBT. For example, there is a small but compelling literature that demonstrates the relationship between recognition of same-sex marriage and improved mental health status and reduced AOD problems. Measures which reduce the stigma and discrimination against GLBT people are likely to have powerful public health impacts.
- GLBT people appear to access treatment for alcohol or drug problems at a higher rate than non GLBT people. For MH, we found no statistically significant differences in rates of treatment seeking, although the data indicate a trend towards higher MH treatment seeking amongst GLBT groups. The implications of this are obvious – all MH and AOD services should expect to see GLBT people within their services. This is a compelling argument for ensuring that services receive appropriate training and are well placed to provide care to this population group.
- GLBT-specific services are those that are specially tailored for GLBT issues. Research has shown some superior outcomes with GLBT-specific services, especially for methamphetamine dependent users. GLBT-specific services provide positive role models, strategies for coping with stigma, tailored interventions for AOD and/or MH and are largely staffed by GLBT practitioners (which is a preference of many GLBT people).

- While we can identify specific treatment needs for some GLBT, in the main GLBT treatment outcomes are the same as for non-GLBT people, and attention to sexuality-related issues in treatment does not appear to be essential, nor necessarily preferred by clients. This suggests we do not need 100% coverage of GLBT-specific services.
- All AOD and MH services should however be GLBT-sensitive. This entails ensuring an adequately trained workforce, culturally appropriate services and a non-judgemental attitude by all staff across the service.
- GLBT-sensitive services are essentially defined by being open, respectful and welcoming of GLBT clients, demonstrating an absence of discrimination or stigmatising attitudes and behaviours.
- The variety of AOD and MH treatment interventions, such as CBT, motivational interviewing, 12 step programs and the community reinforcement approach have all been shown to be effective with GLBT individuals, in the context of a non-GLBT-specific service.
- A diversity of service types is required. Not all GLBT clients want a GLBT-specific service. But they should expect and receive GLBT-sensitive services. On the other hand, some people will achieve better treatment outcomes (across both MH and AOD) in the context of a GLBT-specific service.

Future directions

Despite the substantial number of papers published in the area of GLBT, MH and AOD, many of the research reports are largely descriptive in nature, and the epidemiological studies with appropriate comparisons groups are small in number. Notably, Australian research which compares GLBT and non GLBT populations across mental health and alcohol and other drug problems is very small. We need more Australian research, with adequate sample sizes and preferably using diagnostic criteria, to assess the extent of differences. It also appears very important to concentrate research effort amongst bisexual populations, as this group appeared to experience more problems than the gay and lesbian groups. The few transgender studies that have been undertaken also suggest that this group may suffer from mental health disorders at a greater rate. However, to this point relatively little is known about the mental health of this population.

The research published to date on interventions to redress MH and AOD problems in GLBT populations is also somewhat small. There are some notable gaps, such as Australian treatment outcome studies, comparisons of GLBT-sensitive with GLBT-specific services, and no research on specific interventions such as pharmacotherapy maintenance for opioid dependence.

We hope this report will stimulate interest from the research community in pursuing such studies. More importantly, we hope this report provides direction for policy makers about improved services for GLBT. This includes changes such as the legalisation of same-sex marriage, the establishment of extensive training across all MH and AOD services to ensure GLBT-sensitive services are provided, and the continued support for specialist GLBT services to develop more appropriate and effective interventions for this population.

1. INTRODUCTION

There is a growing body of evidence to suggest that gay, lesbian, bisexual, and transgender (GLBT) people may be at a higher risk of developing mental health and substance use problems when compared to the heterosexual population. The aim of this report, which was commissioned by the New South Wales Health Ministry's Mental Health Drug and Alcohol Office, was to identify and synthesize the existing research evidence related to the prevalence of psychological disorders and problematic drug use (illicit and licit) within GLBT populations.

A number of surveys have attempted to measure the size of the GLBT population in Australia. The Australian Study of Health and Relationships conducted in 2001/02 surveyed a representative sample of 19,307 Australians. Within this sample, 1.6% of men identified as gay, and 0.9% identified as bisexual. 0.8% of women identified as gay, and 1.4% identified as bisexual. A greater proportion of men and women reported either feelings of attraction towards the same sex, or some sexual experience with the same sex (8.6% of men and 15.1% of women). Similarly, the Australian Survey of Social Attitudes found that 1.6% of men identified as gay, and 1% as bisexual. 0.5% of women identified as lesbian, and 0.9% identified as bisexual (Wilson, 2004). Analysis of the 2001 Australian census has revealed that 0.2% of Australians reported being in a same sex relationship; 0.47% of people in a relationship reported that it was a same sex relationship (Birrell & Rapson, 2002). Being Australia's most populous State, NSW has the largest gay, lesbian, bisexual and transgender community in Australia (Birrell & Rapson, 2002).

In summary, it appears that somewhere between 1% and 3% of the general population identify as gay, lesbian or bisexual; and a much higher proportion report same sex attraction. This highlights the importance of clarity of definitions and terms used, since it will clearly affect the resulting population size estimates.

In terms of substance use, whilst the report includes those studies which have looked at the rates of drug use, the focus of this review is on diagnosable mental health disorders, and diagnosable alcohol and other drug disorders (rather than merely use).

Terminology

A range of different terms have previously been used to identify gay, lesbian, bisexual, transgender, and other sexual minority populations. The generic term used to describe these populations in this report is GLBT. However, when discussing the results from individual studies, we adopt those terms used by the study authors, (e.g. "gay", "bisexual", "same-sex attracted" etc.).

Sexual orientation has been previously classified in three possible ways: in terms of self identification (self-labelling of sexual identity); sexual attraction (degree of opposite versus same sex attraction); and behaviour (degree of opposite versus same sex sexual activity/experience) (Talley, Sher, & Littlefield, 2010). Whilst many people self-identify as gay, lesbian, bisexual or transgender, there are other individuals who engage in same-sex activity and yet do not self-identify as GLBT (such as "men who have sex with men"). Similarly, other studies have made a distinction between those who are same sex attracted, and those who have undertaken sexual activity with someone of the same sex.

Another approach has been to combine measures of self-identification, sexual attraction, and sexual experience in order to statistically "create" the different groups. For instance, Fergusson et al. (2005) analysed these factors using a latent class analysis in order to categorize people into 3

groups (a 3-class model was the "best fit" for the data in this instance). The three classes were described as "exclusively heterosexual", "predominantly heterosexual", and "predominantly homosexual".

It is important to note that this is not simply a semantic issue. It is complicated by the fact that there are differences in problematic drug use and psychological disorders between those who self-identify as GLBT and those who do not self-identify, but who have had same sex contact (Wichstrøm & Hegna, 2003). Within this review, we refer here to gay (G), lesbian (L) and bisexual (B), groups, in general. Transgender (T) research has been separated and is addressed in a separate section of the report (see page 7), firstly to avoid conflating research on this group with findings on the other groups, and secondly due to the fact there is only a very small amount of literature on transgender populations.

As the reader will note, in some instances there is no differentiation made between gay and lesbian, nor between gay, lesbian and bisexual groups (in other words a single "homosexual" or "non-heterosexual" group is used). We do this where the literature does not specifically define which sub-group is being referred to, and this largely occurs in the interventions literature. Where no distinction is made between gay, lesbian, bisexual and transgender in this report, it should not be taken to mean that we do not accept that there are important differences between these groups, but rather that the selected literature has not separated them in some instances.

In the review we have taken an inclusive approach, including all literature which has focused on any of the above terms to describe sexual orientation (the search strategy is described below). When citing previous literature, we have endeavoured to keep the terms consistent throughout the report, for ease of reading, but also refer to the terms as used by the original study authors.

Methodology

A search was undertaken of the Medline, PsycINFO, IBSS, and Embase databases. The search terms were selected according to three primary domains: sexual orientation, drug use, and mental health. To be included in the literature review, studies had to include some original data collection/analysis, or some secondary data analysis of original data sets.

To obtain research regarding GLBT populations, the terms "gay", "lesbian", "bisexual*", "transgender", "transsex*", "homosexual", "sexual orientation", "sexual minorit*", "same-sex attract*", "GLB*", "LGB*", "queer" and "MSM" were included. To obtain research relating to drug use, the terms "substance use", "drug", "tobacco", "alcohol", "marijuana", "cannabis", "heroin", "opioid", "opiate", "meth*", "amphetamine*", "cocaine", "crack", "ecstasy", "MDMA" "ketamine", "GHB", "amyl", "inhalant", "poppers", "LSD", "hallucin*" were included. To obtain research relating to psychological disorders, the terms "mental", "depress*", "anxiety", "suicid*" were included. To obtain research relating to interventions, the terms "treatment", "prevention", "harm reduction", "interven*" were included. The terms "comorbid*", "co-occur*", "dual diagnosis" were also included to obtain research which measured comorbidity.

Grey literature was searched via Google and through the following websites: the ISSDP Bibliography, Australian Drug Foundation, GHLV, NCHSR, NDARC, ACON, Fenway Institute (US), LGBTI Health Alliance, Cochrane, using similar search terms.

Previous research has examined a wide range of psychological issues as well as drug use. To provide an adequate boundary around the work, only research which looked specifically at

diagnosed disorders (or symptoms of those disorders) were included for analysis. These disorders included: anxiety disorders, mood disorders, post traumatic stress disorder, and schizophrenia/psychosis. In addition, suicidality was examined. Studies which did not specifically measure these disorders (or symptoms thereof) were excluded from the report (e.g. "stress", eating disorders). In relation to drug use, the report includes those studies which looked at both the prevalence of drug use, as well as diagnoses of disorder (e.g. abuse, dependence).

In relation to epidemiological research, the search located a total of 177 studies that reported prevalence data in relation to MH or AOD, or both. Of these 78 were international studies which did not have a heterosexual comparison group. 76 were international studies which did have a heterosexual comparison group. In addition to the international literature, the search located 23 Australian studies that reported prevalence data. Overall, 38 studies were excluded on the basis that the members of their samples were either all drug users[1], or had a current mental health diagnosis. 17 studies were not able to be obtained. The search also located 69 previous literature reviews, commentary pieces, or meta-analyses.

For the review of interventions, a total of 121 articles, reports and papers were sourced and reviewed that described interventions with GLBT people. Of these, the majority were AOD (47%), with the remaining being MH (26%), followed by descriptive pieces regarding adolescent development and treatment needs without specifying a target behaviour, workforce development papers and a handful on policy interventions. In the main, there were few studies that were directly comparative of GLBT and non-GLBT treatment approaches.

Transgender studies

The scarcity of research into the mental health of the transgender population has been well noted. The search located 5 studies which explicitly examined a sample of transgender people. The results from these studies are presented in Table 1.

Table 1: Transgender research: prevalence of mental health problems

Author(s)	Year	Survey (Year)	Location	Measure	Population	n	Prevalence (%)
Couch et al.	2007	Own	Australia & New Zealand	Current depressive episode	Transgender	253	36.2
				Diagnosis of depression (lifetime)	Transgender	253	49.4
				Dysthymic disorder	Transgender	253	31.6
Grossman & D'Augelli	2007	Own	USA	Suicide attempt	Transgender	55	26.0
Clements-Nolle et al.	2006	Own	USA	Depression (CES-D>=16)	Transgender	515	60.0
				Suicide attempt (lifetime)	Transgender	515	32.0
Kenagy	2005	Own	USA	Suicide attempt	Transgender	182	30.1
Mathy	2002	Own	USA	Suicide attempt	Transgender	73	23.3
					Heterosexual females	1,083	11.4*
					Heterosexual males	1,077	5.0*

[1] In an effort to include all potentially relevant Australian research, some Australian research was included in the report which utilised samples of drug users.

Author(s)	Year	Survey (Year)	Location	Measure	Population	n	Prevalence (%)
					Lesbian females	256	16.0
					Gay males	356	8.7*

Notes
* statistically significant from transgender group ($p < 0.05$), as reported by authors

Couch et al. (2007) measured depression and dysthymic disorder among transgender individuals and New Zealand and Australia. Within the sample, 36.2% satisfied criteria for a current depressive episode and 49.4% had a lifetime diagnosis of depression. 31.6% of the sample satisfied criteria for dysthymic disorder. Clements-Nolle et al. (2006) also measured depression in an American transgender sample, and found that 60% of the sample scored 16 or above on the CES-D scale (see Page 27 for further discussion of this scale). Three studies measured lifetime suicide attempts among transgender samples, with the prevalence ranging from 26% (Grossman & D'Augelli, 2007) to 32% (Clements-Nolle et al., 2006).

Mathy (2002b) compared transgender with gay, lesbian, and heterosexual males and females in regards to past suicide attempts. The study found a significantly greater rate of past suicide attempts among transgender respondents when compared to heterosexual males and females, as well as homosexual males, but not homosexual females[2]. Other studies included transgender individuals in their sample, but did not separate them in their analysis (eg. Ramirez-Valles, Garcia, Campbell, Diaz, & Heckathorn, 2008).

Given the small number of studies, and the strong lack of comparative research, it is difficult to draw definitive conclusions regarding the mental health of the transgender population in Australia or elsewhere. However, given the higher prevalence of suicidality among transgender respondents in particular, it is likely that the problems seen in the broader GLBT community are felt equally, if not more, by the transgender community as much as they are by the lesbian, gay or bisexual communities.

Comorbidity

Comorbidity is defined as the presence of more than one disorder. The presence of mental health problems, along with excessive alcohol/drug use is considered to be particularly complex, but also relatively common (Reiger, Farmer, Rae, Locke, Keith, Judd, & Goodwin, 1990).

Wang et al. (2007) analysed data from the Geneva Gay Men's Health Survey, which examined mental health and substance abuse among 571 self identified gay men and/or men who had sex with men. 4.5% of the sample had a comorbid mood and anxiety disorder; whereas less than three per cent of the sample had a comorbid mood/anxiety and substance use disorder. Bostwick et al. (2005) examined a Chicago survey of lesbians. 13% of the sample reported co-occurring depression and alcohol dependence symptoms in the past 12 months.

Five studies of GLBT samples *with* a heterosexual comparison group explicitly analysed comorbidity, and all of them found significantly higher rates of comorbidity in the GLBT sample. Cochran et al. (2003) examined the 12 month prevalence of two or more comorbid disorders (major depression, generalized anxiety disorder, panic disorder, alcohol/drug dependency) in a US population sample. 19.6% of gay/bisexual men reported two or more

[2] In another study, Mathy et al. (2003) compared transgender individuals with bisexual males and females, and found that suicide attempts were more common among transgender when compared to bisexual males, but there was no difference between transgender and bisexual females (prevalence data were not reported). There were no differences between transgender respondents and bisexuals of either gender in terms of drug and alcohol problems.

disorders, compared to 5.0% of heterosexual men (AOR: 3.8). Similarly, 23.5% of lesbian/bisexual women reported 2 or more disorders, compared to 7.7% of heterosexual women (AOR: 2.9). Similar results were found by Fergusson et al. (1999) in a New Zealand sample, with 78.6% of gay/lesbian/bisexual respondents reporting multiple psychological disorders, compared with 38.2% of heterosexual respondents (OR: 5.9), and also Sandfort et al. (2001) in the Dutch NEMESIS study. Hatzenbuehler et al. (2009) found 20.1% of the gay/lesbian/bisexual sample in a US population sample (NESARC) reported 2 or more disorders, compared to 6.4% of the heterosexual sample. Also analysing the NESARC, Talley et al. (2011) measured the prevalence of comorbid alcohol and drug dependence, and found that this was also significantly higher among the non-heterosexual sample. Australian research (Matheson, Roxburgh, Degenhardt, Howard, & Down, 2010) on Sydney GLBT methamphetamine users found that more than half the sample had mental health problems. These studies indicate that comorbidity is more prevalent among gay, lesbian and bisexual individuals than it is among the heterosexual population.

There is a paucity of treatment outcome research examining comorbidity amongst GLBT. Peck et al. (2005) studied gay and bisexual methamphetamine dependent men who were also depressed. Follow-up after one year post-randomisation (for full study details see Chapter 5) found decreases in depression in association with methamphetamine treatment. The findings showed that "methamphetamine abuse treatment yields reductions in methamphetamine use and concomitant depressive symptom ratings that are sustained to 1 year after treatment entry" (page i100). These findings are commonly reported in AOD treatment outcome studies, where mental health symptoms improve concomitant with decreases in alcohol and drug consumption, and appear applicable to GLBT populations.

Structure of the report

The report from here is separated into four main sections. The first covers research on the epidemiology of mental health disorders amongst GLBT. The second section covers the prevalence of alcohol and other drug disorders amongst GLBT. In both of these cases, the international literature is reviewed first, followed by Australian data. Prevalence figures pertaining to each disorder are presented in tables. Prevalence figures were not given in some previous research studies, and odds ratios (adjusted and unadjusted) are provided instead. Odds ratios are not presented in the tables but are discussed in text where appropriate.

The third section examines the causal factors that may explain the relationship between GLBT and mental health and alcohol and other drug disorders. The final section of the report reviews the literature on interventions: describing GLBT-sensitive versus GLBT-specific service types, evidence for effectiveness, and treatment seeking patterns.

2. MENTAL HEALTH DISORDERS AMONG GAY, LESBIAN, BISEXUAL AND TRANSGENDER POPULATIONS

The following section provides a comprehensive description of the existing literature reporting the prevalence of mental health disorders within GLBT populations. The analysis has focused largely on *diagnoses* of mental health disorders, rather than the presence of mental health symptoms (such as psychological stress), however it should be noted that many studies included in the review did not use a formal diagnosis.

The studies can be categorised into two distinct groups: those that describe the prevalence of mental health disorders within GLBT *and* heterosexual groups; and those that describe the prevalence of mental health disorders within the GLBT community only. In the case of the former, surveys estimate mental health disorders, and may also ask questions about sexual orientation/identity; these surveys can then be analysed by GLBT status for each mental health disorder. An Australian example of this is the National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics, 2008). Those surveys that sample a random selection of the entire general population should result in *roughly* representative samples of GLBT populations, however the sample sizes are likely to be small, except in studies where the overall sample size overall is very large.

The other type of study, which surveys GLBT populations exclusively, may provide more sufficient sample sizes of GLBT, but the possibility of direct comparison with non-GLBT is absent. In addition, in many instances the sample is attained through convenience, which makes it more difficult to know if the prevalence estimates among these samples are representative of the broader GLBT population.

Given these differences, in this report we have chosen to focus to a greater extent on those studies which have used representative population samples, with both GLBT and heterosexual respondents (described henceforth as studies using a "population/random sample"). Other studies which use "targeted/convenience" samples are also included. Brief descriptions of studies which did not include a non-GLBT comparison group and nor use a general population sample are treated summarily in the beginning of each section.

Overall, we sourced 41 studies which described the mental health diagnoses in this population. The majority of these (n=24) did not include a heterosexual comparison group. As such, whilst they are useful descriptive studies of these populations, they do not enable comparisons to be made with non-GLBT populations, and thus do not allow any sense of whether mental health disorders are more (or less) prevalent within these groups.

We deal with each mental health diagnostic group in turn: anxiety disorders (including generalised anxiety disorder and post traumatic stress disorder), mood disorders (major depression, dysthimia), and psychotic (including schizophrenia). In addition, we also examine literature on suicidality within this group. Within each of these domains, the international literature is reviewed first, followed by the Australian literature. This section concludes with our own data analysis of Australian rates of mental health disorders in GLBT from the NSMHWB.

At the outset, we anticipated higher rates of mental health problems amongst GLBT because of the results of recent meta-analyses and literature reviews. For example, a meta-analysis of 25 studies undertaken by King et al. (2008) showed that GLBT individuals were at a significantly higher risk of suicidal behaviour, mental disorder, substance misuse and dependence than heterosexual people. Corboz et al. (2008) undertook a review of literature dealing specifically

with depression amongst GLBT populations. The review focused on depression in these groups, and concluded that a majority of the literature showed that GLBT individuals exhibit higher rates of depression when compared with heterosexuals. Hence our starting hypothesis: GLBT individuals experience higher rates of mental health disorders than non-GLBT individuals.

2.1 Anxiety disorders

Anxiety disorders include those mental illnesses that involve persistent pathological fear and anxiety, in excess of what might be considered a "normal" level. There are a range of anxiety disorders, including (but not limited to) generalised anxiety disorders, panic disorder, phobia, and post-traumatic stress disorder. In the following section, we describe those studies obtained which measured the prevalence of anxiety disorders within GLBT populations. A large number of the studies obtained measured the prevalence of any type of anxiety disorder, whilst others examined particular disorders. In the following section, we present data on four individual disorders, where possible: Generalised Anxiety Disorder (GAD), panic disorder, social phobia, and Post-traumatic Stress Disorder (PTSD).

2.1.1 International literature: Anxiety disorders

The search located four studies which measured the prevalence of anxiety in GLBT populations, without a heterosexual comparison group. Each of these studies provided very similar results, despite differences in the samples and measures used. Bradford et al. (1994) surveyed 1,925 lesbian women in the USA and found that 7% of the sample felt "constant anxiety" at the time. Similarly, Diaz et al. (2001) found in a sample of 912 gay and bisexual Latino men that 7% had felt anxiety "many times" during the preceding 6 months. Lehavot and Simoni (2011) surveyed 1,381 sexual minority women and also found that 7% exhibited "significant anxiety" (defined as a score of more than 15 on the GAD-7 scale). In relation to diagnosis of anxiety disorders, Wang et al. (2007) analysed data from the Geneva Gay Men's Health Survey, which examined mental health and substance abuse among 571 self identified gay men and/or men who had sex with men. 21.9% of the sample had a past year anxiety disorder (12.6% had a specific phobia, and 13.5% had social phobia). It is interesting to note that the prevalence of anxiety disorders in this study (Wang, et al., 2007) is substantially higher than the rates of self-reported symptoms of anxiety from the other cited work.

Turning now to those studies which included a non-GLBT comparison group, we located 12 studies from around the world that compared the prevalence of anxiety disorders in heterosexual and GLBT populations (See Table 2). Overall, 10 of these studies demonstrated a significantly higher prevalence of anxiety disorders within GLBT populations; although every study found higher rates of anxiety disorders in the GLBT groups (see Table 2).

Bolton and Sareen (2011) used nationally representative data (the National Epidemiological Survey on Alcohol and Related Conditions, or NESARC) to examine relationships between psychological disorders and sexual orientation (self-identified). The study used data from wave 2 of the NESARC which was conducted in 2004-2005, and had a sample size of 34,653. The analysis found that 21.4% of heterosexual men had a lifetime anxiety disorder (including generalized anxiety disorder, agoraphobia, panic disorder, PTSD, and social phobia) compared with 45.8% of gay men, and 40.6% bisexual men. Similarly, 36.3% of heterosexual women had a lifetime anxiety disorder, compared to 48.4% of lesbian women and 66.2% of bisexual women. The study also used a multivariate logistic regression analysis to compare the rates of disorder between heterosexual and non-heterosexual respondents. After adjusting for other demographic

factors, including but not limited to age, marital status, educational attainment and income, the study found that these differences were statistically significant.

Bostwick et al. (2010) also analysed the same dataset (wave 2 of the NESARC). The analysis found that both gay and bisexual men were significantly more likely to have both a lifetime and past year anxiety disorder compared to heterosexual men. Lesbian and bisexual women were more likely to have a past year anxiety disorder, and bisexual women were more likely to have a lifetime anxiety disorder, compared to heterosexual women. In each case these differences were significant after taking into account other demographic factors.

The prevalence of anxiety disorders in the NESARC found by Bostwick et al. were different to those found by Bolton and Sareen (see Table 1), even though the data used were identical. These differences are due to what the authors included as an "anxiety disorder". Bolton and Sareen (2011) included agoraphobia (without panic disorder) and post traumatic stress disorder in the assessment of anxiety disorders, whereas Bostwick et al. (2010) did not, explaining why Bolton and Sareen found a higher prevalence of anxiety disorders in their analysis of the NESARC dataset. Hatzenbuehler et al. (2009) also examined the NESARC, but focused on anxiety disorders in the past 12 months, and also found a higher prevalence among GLB respondents.

Chakraborty et al. (2011) analysed the Adult Psychiatric Morbidity Survey in England, designed to include a sample representative of householders. The study classified sexuality in two different ways; sexual identity, and partnership status (same or opposite gendered partners). The authors found that the prevalence of generalised anxiety disorder in this survey was significantly higher among self identified non-heterosexuals in England, compared to heterosexuals (4.2% to 6.3%), and that this difference remained statistically significant after accounting for other demographic factors. When examining the difference by partnership status, a similar result was found. The sample was not split by gender.

Cochran et al. have undertaken a number of studies comparing the mental health of heterosexual and non-heterosexual populations (Cochran & Mays, 2000b; Cochran & Mays, 2009; Cochran, Mays, Alegria, Ortega, & Takeuchi, 2007b; Cochran, et al., 2003). Analysis of the 1995 National Survey of Midlife Development in the United States (MIDUS), designed to capture a representative sample of Americans in their mid-life (Cochran, et al., 2003), found that lesbian/bisexual females in this sample had a significantly higher prevalence of generalised anxiety disorder (14.7%) when compared to heterosexual women (3.8%). However, the difference between gay/bisexual and heterosexual men on this measure was not statistically significant. Analysis of another survey, the California Quality of Life survey (a representative sample of adult Californians) found higher rates of generalised anxiety disorder among gay and bisexual males, and bisexual females (but not lesbian females), when compared to their heterosexual counterparts (Cochran & Mays, 2009).

In the other studies undertaken by Cochran et al., whilst there were differences between heterosexual and non-heterosexual groups in terms of anxiety, these differences were not statistically significant. Analysis of the National Latino and Asian-American Survey, which captured a probability sample of this particular ethnic population (Cochran, et al., 2007b), showed no difference in the 12 month or lifetime prevalence of anxiety disorders. Similarly, analysis of the US National Household Survey of Drug Abuse (Cochran & Mays, 2000b) found no difference between those with same sex or opposite sex partners, in the prevalence of generalised anxiety disorder.

Other studies have found differing results according to gender. Gilman et al. (2001) analysed the 1990-1992 National Comorbidity Survey, which utilised a representative sample of householders, and also found that the prevalence of anxiety disorders was significantly higher among females with same sex partners, but not among males with same sex partners. Sandfort et al. (2001) analysed the Netherlands Mental Health Survey and Incidence Study (NEMESIS), which assessed mental health disorders in a representative sample of the Dutch population. The analysis found that 19.5% of homosexual men had a 12 month anxiety disorder, compared to 7.6% of heterosexual men (a statistically significant difference). However, the prevalence of anxiety disorders among homosexual women was the same as that for heterosexual (16.3% to 16.4%).

Two studies utilised a non-random sample (the two studies were on the same cohort at difference points in time; Christchurch Health and Development Study, a longitudinal study of a cohort born in 1977). In the first study, Fergusson et al. (1999) found a significantly higher prevalence of GAD in the cohort whilst aged between 16 and 21. In the later study, which involved a follow-up on this cohort, Fergusson et al. (2005) found very large differences between the heterosexual and homosexual groups. 10.2% of males who were "exclusively heterosexual" satisfied the criteria for an anxiety disorder whilst between the ages of 21 and 25, compared with 85.7% of those males classed as predominantly heterosexual (categories of sexual orientation were constructed in this study, using a latent class analysis of factors relating to identity, same sex attraction and experience). The difference between heterosexual and homosexual females was less stark, but was also statistically significant (21.2% to 40%).

Table 2: Prevalence of anxiety disorders among GLBT; International studies with a non-GLBT comparison group

Author(s) of study	Year	Survey analysed (Year of survey)	Location	Measure	Population	n	Prevalence (%)
General population sample							
Bolton & Sareen	2011	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Any anxiety disorder (lifetime). Measured using DSM IV criteria according to AUDADIS-IV.	Gay males	190	45.8†
					Bisexual males	81	40.6†
					Heterosexual males	14,109	21.4
					Lesbian females	145	48.4†
					Bisexual females	161	66.2†
					Heterosexual females	19,489	36.3
Chakraborty et al.	2011	Adult Psychiatric Morbidity Survey (2007)	England	Generalised anxiety disorder (current). Measured using CIS-R.	Non-heterosexuals	650	6.3†
					Heterosexuals	6,811	4.2
					Any same gender partners	667	6.0†
					Opposite gender partners	6,794	4.2
Bostwick et al.	2010	National Epidemiological Survey on Alcohol and other Conditions (2005-2005)	USA	Any anxiety disorder (lifetime). Measured using DSM IV criteria according to AUDADIS-IV.	Lesbian females	145	40.8*
					Bisexual females	161	57.8†
					Heterosexual females	19,489	31.3
					Gay males	190	41.2†
					Bisexual males	81	38.7†
					Heterosexual males	14,109	18.6
Hatzenbuehler et al.	2009	National Epidemiological Survey on Alcohol and other Conditions (2005-2005)	USA	Any anxiety disorder (past 12 months).	Lesbian/gay/bisexual	577	30.1†
					Heterosexuals	34,076	16.1
				Generalised anxiety disorder (past 12 months).	Lesbian/gay/bisexual	577	8.5†
					Heterosexuals	34,076	3.7
Cochran & Mays	2009	California Quality of Life Survey (2004-2005)	USA	Generalised anxiety disorder (past 12 months). Measured using CIDI-SF.	Lesbian females	-	9.2
					Bisexual females	-	20.3†
					Heterosexual females	-	7.6
					Gay males	-	15.4†
					Bisexual males	-	15.6†
					Heterosexual males	-	5.9
Cochran et al.	2007	National Latino and Asian American	USA	Any anxiety disorder (past 12 months)	Gay/bisexual males	84	10.9
					Heterosexual males	1,982	6.8

Author(s) of study	Year	Survey analysed (Year of survey)	Location	Measure	Population	n	Prevalence (%)
		Survey (2002-2003)			Lesbian/bisexual females	161	11.3
					Heterosexual females	2,271	10.3
				Any anxiety disorder (lifetime)	Gay/bisexual males	84	18.7
					Heterosexual males	1,982	11.1
					Lesbian/bisexual females	161	14.1
					Heterosexual females	2,271	17.0
Cochran et al.	2003	National Survey of Midlife Development in the United States (1995)	USA	Generalised anxiety disorder (past 12 months)	Gay/bisexual males	37	2.9
					Heterosexual males	1,239	1.8
					Lesbian/Bisexual females	37	14.7*
					Heterosexual females	1,604	3.8
Gilman et al.	2001	National Comorbidity Survey (1990-1992)	USA	Any anxiety disorder (past 12 months)	Males w/same sex partner	74	15.0
					Males w/opposite sex partner	2,310	11.6
					Females w/same sex partner	51	40.0*
					Females w/opposite sex partner	2,475	22.4
Sandfort et al.	2001	Netherlands Mental Health Survey and Incidence Study (1996)	Netherlands	Any anxiety disorder (last 12 months)	Gay males	82	19.5†
					Heterosexual males	2,796	7.6
					Lesbian females	43	16.3
					Heterosexual females	3,077	16.4
				Any anxiety disorder (lifetime)	Gay males	82	31.7†
					Heterosexual males	2,796	13.2
					Lesbian females	43	25.6
					Heterosexual females	3,077	25.1
Cochran & Mays	2000	National Household Survey of Drug Abuse (1996)	USA	Generalised anxiety disorder (past 12 months)	Males w/same sex partner	98	3.1
					Males w/opposite sex partner	3,922	1.6
					Females w/same sex partner	96	3.5
					Females w/opposite sex partner	5,792	2.6
Targeted/convenience sample							
Fergusson et al.	2005	Christchurch Health and Development Study	NZ	Anxiety disorder (whilst aged 21-25)	Gay males	7	85.7*
					Heterosexual males	441	10.2
					Lesbian females	20	40.0*
					Heterosexual females	411	21.2

Author(s) of study	Year	Survey analysed (Year of survey)	Location	Measure	Population	n	Prevalence (%)
Fergusson et al.	1999	Christchurch Health and Development Study	NZ	Generalised anxiety disorder (whilst aged 14-21)	Gay/lesbian/bisexual Heterosexual	28 979	28.6* 12.5

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken

Some studies have explicitly examined specific diagnoses within the broad category of anxiety disorders. For example, in relation to panic disorder, Hatzenbuehler et al. (2009) found that 8.2% of the GLB respondents in the NESARC suffered from panic disorder, compared to 2.5% of the heterosexual respondents. Cochran and Mays (2000b) analysed data from the US National Household Survey of Drug Abuse. After taking into account other demographic factors such as age and education, males with same sex partners in the previous 12 months were four times more likely have suffered from panic attacks in the past 12 months. Cochran et al. (2003) found an elevated prevalence of panic disorder within gay and bisexual men, compared to heterosexual men (there were no differences between lesbian/bisexual and heterosexual women). Similarly, Cochran and Mays (2009) found higher prevalence of panic attacks among their GLBT sample, compared to the non-GLBT sample. Another specific anxiety disorder that has been examined is phobic disorder: Chakraborty et al. (2011) found an increased prevalence of phobic disorder among non-heterosexual respondents (2.8% to 1.3%); and Hatzenbuehler et al. (2009) found that 13.3% of the GLB respondents in the NESARC suffered from specific phobia, compared to 7.4% of the heterosexual respondents.

There was a small literature on PTSD; four studies were located that have specifically measured PTSD within these populations. Roberts et al. (2010) found that in the NESARC study, both men and women with same sex sexual partners were at an elevated risk of PTSD. Whitbeck et al. (2004) surveyed homeless youth and found that within this population, PTSD was significantly more prevalent among lesbian female youth than heterosexual (59.1% compared to 41.6%), but there were no difference between gay male youth and heterosexual (21.1% to 23.8%). In their analysis of the NCS, Gilman et al. (2001) found a significantly higher prevalence of PTSD among women who had same sex partners, compared to women with opposite sex partners only. Hatzenbuehler et al. (2009) found that 13% of the GLB respondents in the NESARC suffered from PTSD, compared to 6.4% of the heterosexual respondents.

Taken together across all anxiety disorders a majority of the studies reviewed show a higher prevalence of anxiety disorders among GLBT respondents than heterosexual respondents. An increased prevalence was more commonly found for non-heterosexual women than men, which may suggest that lesbian and bisexual women are at particular risk for these types of disorders. In addition, in the 3 studies which disaggregated the data – (Bolton & Sareen, 2011; Bostwick, et al., 2010; Cochran & Mays, 2009) – each showed that bisexual women had the highest rates of anxiety disorders out of any group.

2.1.2 Australian findings: Anxiety disorders

There have been three published Australian studies that have measured anxiety disorders (and published prevalence data) amongst the GLBT population in the absence of a comparison group. Amongst a clinical cohort of 542 homosexually active men in Adelaide enrolled in a HIV care and prevention programme, 10% met DSM-IV diagnostic criteria for a panic disorder, and a further 47% satisfied DSM-IV criteria for generalised anxiety disorder (Rogers et al. 2004). The Private Lives study represents one of the largest surveys every conducted of the GLBT community, including intersex and transgender individuals (n = 5,476). In the Private Lives study, 20.2% of the cohort report being diagnosed with an anxiety disorder by a doctor (Pitts, Smith, Mitchell, & Patel, 2006). Finally, among a sample of GLBT individuals in Sydney reporting regular methamphetamine use, Matheson et al. (2010) found that 30% of respondents reported experiencing an anxiety disorder.

Only one study could be located which included a comparison between GLBT and heterosexual groups and anxiety disorders and reported prevalence data (see Table 3). In a general population cohort study of young and mid-age women, McNair et al. (2005) found that in the younger cohort, self identified "mainly heterosexual" (11%) and bisexual females (15.4%) reported a significantly higher prevalence of diagnosed anxiety compared to "exclusively heterosexual" females (4.6%), however there were no significant differences among the groups in the mid-age cohort, after taking into account other factors. In regards to self-reported anxiety, there were similar findings in the younger cohort, with mainly heterosexual and bisexual females reporting a higher prevalence. In the mid-age cohort, mainly heterosexual females reported a significantly higher prevalence (34.2%) of self reported anxiety than exclusively heterosexual females (19.6%), with no significant differences among the other groups.

Jorm, Korten, Rodgers, Jacomb, & Christensen (2002) analysed data from the PATH Through Life Project, which surveyed a sample of 20-24 and 40-44 year old Australians. The overall sample size was 4,824. The study compared anxiety between heterosexual and homosexual respondents, but did not report prevalence data. The analysis showed that those who identified as homosexual and bisexual scored significantly higher on anxiety than the heterosexual respondents, with the bisexual group scoring the highest.

Table 3: Prevalence of anxiety disorders among GLBT; Australian studies with a non-GLBT comparison group

Author(s)	Year	Survey	Measure	Population	n	Prevalence (%) (SD)
McNair et al.	2005	Australian Longitudinal Study on Women's Health	Doctor-diagnosed anxiety in last four years	Exclusively heterosexual females (aged 22-27)	8,132	4.6
				Mainly heterosexual females (aged 22-27)	603	11.0†
				Bisexual females (aged 22-27)	73	15.4†
				Homosexual females (aged 22-27)	90	9.3
				Exclusively heterosexual females (aged 50-55)	8,207	6.6
				Mainly heterosexual females (aged 50-55)	606	12.3
				Bisexual females (aged 50-55)	73	2.9
				Homosexual females (aged 50-55)	90	7.3
			Self-reported anxiety in last year	Exclusively heterosexual females (aged 22-27)	8,132	7.9
				Mainly heterosexual females (aged 22-27)	603	16.9†
				Bisexual females (aged 22-27)	73	23.1†
				Homosexual females (aged 22-27)	90	12.6
				Exclusively heterosexual females (aged 50-55)	8,207	19.6
				Mainly heterosexual females (aged 50-55)	606	34.2†
				Bisexual females (aged 50-55)	73	6.1
				Homosexual females (aged 50-55)	90	21.8
Original analyses: Carragher, Matthew-Simmons, Ritter	2007	National Survey of Mental Health and Wellbeing.	Generalised anxiety disorder	Homosexual/bisexual	199	15.35 (3.14)
				Heterosexual	8,639	7.74 (0.44)
			Panic disorder	Homosexual/bisexual	199	8.46 (2.21)
				Heterosexual	8,639	3.45 (0.31)
			Post-traumatic stress disorder	Homosexual/bisexual	199	20.38 (2.79)*
				Heterosexual	8,639	6.97 (0.35)
			Social phobia	Homosexual/bisexual	199	20.29 (2.60)*
				Heterosexual	8,639	8.17 (0.40)

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken

We undertook our own original analyses of the National Survey of Mental Health and Wellbeing (see Table 3) for the purposes of conducting this review. The 2007 National Survey of Mental Health and Well-Being (NSMHWB) is a nationally representative, face-to-face survey of 8,841 individuals aged 16-85 years. The NSMHWB is conceptualised according to the two major psychiatric classification systems: the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV; American Psychiatric Association, 1994) and the International Classification of Diseases, 10th revision (ICD-10; World Health Organisation, 1993). Analyses of differences between homosexual/bisexuals and heterosexuals on DSM-IV-defined disorders have been summarily reported by the ABS but here we conducted more specific analyses comparing mental health diagnoses in GLBT and non-GLBT respondents to the NSMHWB.

The target population of the NSMHWB was residents in private dwellings across all states and territories in Australia. A random sample of private dwellings was identified using a stratified, multistage area probability sampling technique; the overall response rate was 60%. Those residing in special dwellings (e.g., hospitals, nursing homes, jails, hostels) and those living in remote and sparsely populated areas of Australia were excluded from the survey. Fieldwork for the survey was conducted by trained interviewers from the Australian Bureau of Statistics between August and December 2007. Interviews took place in respondents' homes and took an average of 90 minutes. A more detailed discussion of the sampling design and NSMHWB methodology is available elsewhere (Slade, Johnston, Oakley-Browne, Andrews, & Whiteford, 2009).

Sexual orientation was assessed by asking respondents 'Which of these categories best describes your current sexual orientation?: (i) heterosexual, (ii) homosexual, or (iii) bisexual?'. In total, 97.7% (n = 8,639) respondents identified as heterosexual, 1.5% (n = 135) as homosexual, and 0.7% as bisexual (n = 64); three people did not provide information for this question. Due to low numbers of homosexual and bisexual respondents, the analyses presented in this report combine homosexual with bisexual individuals. We were also not able to conduct gender breakdown analyses, due to small sample sizes.

We compared the lifetime prevalence of DSM-IV anxiety diagnoses amongst homosexual/bisexual with heterosexual respondents. Analyses were conducted in SUDAAN using the PROC CROSSTAB command and chi-square tests were generated to gauge statistical significance. Since multiple comparisons increase the risk of Type I error, the Bonferroni technique was applied.

The results for anxiety disorders can be found in Table 3. Homosexual/bisexual individuals in the general population had a higher prevalence of anxiety disorders for each of the four anxiety disorders: generalised anxiety disorder; panic disorder; PTSD; and social phobia. However only the latter two were statistically significant; there were more than twice the rate of these diagnoses in homosexual/bisexual respondents than heterosexual respondents (see Table 3).

2.2 Mood disorders/depression

Mood (affective) disorders include those disorders in which disturbance of the mood is thought to be the major underlying feature. Types of mood disorders include major depression, dysthymic disorder, and bipolar disorder. In Australia, mood disorders are generally less prevalent than anxiety disorders. Around 6% of the Australian population had a mood disorder in the previous 12 months in 2007 (Australian Bureau of Statistics, 2008).

2.2.1 International literature: Depression

The international literature search found nine studies without a heterosexual comparison group that reported the prevalence of mood disorders, including depression, in some way. However, the way that depression (which was the most commonly measured mood disorder) has been measured, varies. The most commonly used tool to measure depression in the non-comparison studies was the Centre of Epidemiological Studies Depression scale (CES-D). However, whilst this test has been used often, there has not been uniformity in terms of the reporting of cut-off scores. Whilst a score of 16 or above is generally used, other studies have used different cut-offs as a measure for depression, e.g. 22 and above (Friedman, Marshal, Stall, Cheong, & Wright, 2008). Using this scale, the prevalence of depression found in GLBT samples ranged from 32% in a sample of homosexually active African American men, using a cut-off score of >15 (Cochran & Mays, 1994), to 45% in a sample of Asian American/Pacific Islander MSM, using a cut-off of >16 (Yoshikawa, Wilson, Chae, & Cheng, 2004).

In other non-comparison studies, 30% of a sample of lesbian women scored above 30 on the Generalised Contentment Scale, indicating clinically significant depression (Ayala & Coleman, 2000). Diaz et al. (2001) found that 22% of a sample of gay/bisexual Latino men had felt "sad or depressed" many times during the past six months. In the Wang et al. study (2007) of self identified gay men and/or men who had sex with men, 19.2% of the sample had past year major depression, according to DSM-IV criteria. Bostwick et al. (2005) examined a sample of 403 lesbians and bisexual women living in Chicago, and found that 22% of the sample met criteria for a depressive episode in the last 12 months. Importantly, in the absence of a non-GLBT comparison group, little can be said about whether these elevated rates of depression are significantly different from non-GLBT people.

The more definitive literature uses both prevalence data, plus a non-GLBT comparison group. We located 18 international studies that included a heterosexual comparison group and reported the prevalence of mood disorders (see Table 4), with 12 of these studies utilising a general population random sample. Overall, these studies suggest higher prevalence of mood disorders in GLBT populations; with 14 out the 18 showing statistically significant findings (see Table 4)[3].

In their analysis of the NESARC (USA), Bolton and Sareen (2011) found that 42.3% of gay men and 36.9% of bisexual men had a lifetime mood disorder (including major depression), compared to 19.8% of heterosexual males. Similarly, 44.4% of lesbian women and 58.7% of bisexual women had a lifetime mood disorder, compared to 30.5% of heterosexual women (Bolton & Sareen, 2011). These differences were significant after accounting for other demographic factors. Bostwick et al. (2010) found identical results in their analysis of the same data, and Hatzenbuehler et al. (2009) also found significantly higher rates of mood disorders and GLB adults in the NESARC.

Needham and Austin (2010) analysed data from Wave 3 of the Add Health study, which included data from 11,000 18-26 year olds in the United States. The study found that lesbian and bisexual women had significantly higher prevalence of high depression symptoms (as measured

[3] In addition, we also located a number of studies that compared GLBT and non-GLBT on depression, but failed to report prevalence figures. These studies included work by Cochran (2002) who found that those with a GLBT identity were more likely to report more depressive symptoms. Similar results were found by Case (2004), Westefeld (2001), Nurius (1983) and Ueno (2010). Bos et al. (2008) analysed data from a school-based convenience study of 866 young people aged between 13 and 15, sampled from four high schools in The Netherlands, in which 74 young people reported having same-sex attraction. Same-sex-attracted young people had significantly higher levels of depressive symptoms than other-sex-attracted young people, as measured on the depression scale of the General Health Questionnaire (GHQ).

by the CES-D) compared to heterosexual women, but there were not differences between gay/bisexual and heterosexual males.

Cochran & Mays (2009) found significantly higher prevalence of 12 month major depression among lesbian/bisexual females, and gay (but not bisexual) males. Again, the highest prevalence was found among bisexual females (35.8%). In other studies, Cochran et al. (2007b) found that lesbian/bisexual Latino and Asian American women had a significantly higher prevalence of depressive disorders (in the past 12 months; 16%) than heterosexual women from the same ethnic group (9.2%).

The MIDUS study found that gay/bisexual males had a higher prevalence of major depression in the past 12 months (31% to 10.2%), however the difference between lesbian/bisexual and heterosexual females was not statistically significant (Cochran, et al., 2003). Similarly, males with same sex partners had a higher prevalence of major depression in the NHSDA, but there were no significant differences found between women with or without same sex partners (Cochran & Mays, 2000b). In an analysis of the National Health and Nutrition Examination Survey (NHANES III), Cochran & Mays (2000a) found that males with same sex partners had a higher prevalence of lifetime major depression than males with opposite sex partners only (15.3% to 6.5%), however this difference was not statistically significant.[4]

Gilman et al. (2001) found that 35.1% of women reporting a same-sex partner in the National Comorbidity Survey had had a mood disorder in the past 12 months, compared with 13. 9% of women who had had opposite sex partners only. This difference was statistically significant; however there was no significant difference between men with/without same sex partners.

Diamant and Wold (2003) surveyed over four thousand women in California. 10.6% of heterosexual women reported having a diagnosis of depression at some point in their lives, compared to 20.9% of lesbian women and 13% of bisexual women. However after adjusting for other demographic factors, neither of these sexual minority groups was significantly more likely to have been diagnosed with depression. Sandfort et al. (2001) found both homosexual men and women had significantly higher prevalence of both 12 month and lifetime mood disorders in the NEMESIS.

Of the 6 comparison studies that did not use a general population random sample, 4 found significantly higher rates of mood disorders in the GLBT sample (one study did not undertake significance testing. See Table 4). Whitbeck et al. (2004) surveyed a sample of runaway adolescents, finding that males who self identified as gay had significantly greater prevalence of major depression than heterosexual males; however there were no differences between lesbian and heterosexual females. Noell and Ochs (2001) also surveyed a sample of homeless adolescents, and found higher rates of depression among the non-heterosexual respondents. Fergusson's et al. (1999; 2005) analyses of Christchurch Health and Development Study found that GLB respondents were more likely to suffer from major depression[5]

[4] Other studies (in addition to those presented in Table 4) found non-significant differences between heterosexual and non-heterosexual groups in regard to symptoms of depression. Cooperman et al. (2003) found no significant difference between sexual minority and heterosexual women (all of whom were HIV+) in terms of depression, as measured by the CES-D. Similarly, McClure et al. (1996) found no relationship between sexual identity and depression in a HIV+ sample.

[5] In regards to the international literature that measured other mood disorders, Hatzenbuehler et al. (2009) found that 2.1 % of the GLB respondents in the NESARC suffered from dysthymia, compared to 1.2% of the heterosexual respondents. This difference was not statistically significant. Hatzenbuehler et al. (2009) found that 6.6% of the GLB respondents in the NESARC suffered from mania or hypomania, compared to 3.4% of the heterosexual respondents.

Table 4: Prevalence of mood disorders/depression among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Survey (Year of survey)	Location	Measure	Group	n	Prevalence (%)
Population/random sample							
Bolton and Sareen	2011	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Any mood disorder (lifetime)	Lesbian female	145	44.4†
					Bisexual female	161	58.7†
					Heterosexual female	19,489	30.5
					Gay male	190	42.3†
					Bisexual male	81	36.9†
					Heterosexual male	14,109	19.8
Bostwick et al.	2010	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Any mood disorder (lifetime)	Lesbian female	145	44.4†
					Bisexual female	161	58.7†
					Heterosexual female	19,489	30.5
					Gay male	190	42.3†
					Bisexual male	81	36.9†
					Heterosexual male	14,109	19.8
Needham & Austin	2010	Add Health (2001-02)	US	"High depression" (score of 10/11 on CES-D)	Lesbian female (youth)	72	15.2*
					Bisexual female (youth)	152	19.7†
					Heterosexual female (youth)	5,416	11.1
					Gay male (youth)	131	14.9
					Bisexual male (youth)	40	17.5
					Heterosexual male (youth)	5,352	8.9
Cochran & Mays	2009	California Quality of Life Survey (2004-2005)	USA	Major depressive disorder (past 12 months)	Lesbian female	?	24.7†
					Bisexual female	?	35.8†
					Exclusively heterosexual	?	14.4
					Gay male	?	21.5†
					Bisexual male	?	15.7
					Heterosexual male	?	8.7
Hatzenbuehler et al.	2009	National Epidemiological Survey on Alcohol and other Conditions (2005-2005)	USA	Any mood disorder (past 12 months)	Lesbian/gay/bisexual	577	20.4†
					Heterosexuals	34,076	10.2

Author(s)	Year	Survey (Year of survey)	Location	Measure	Group	n	Prevalence (%)
Cochran et al.	2007	National Latino and Asian American Survey (2002-2003)	USA	Any depressive disorder (past 12 months)	Gay/bisexual male	84	8.1
					Heterosexual male	1,982	6.0
					Lesbian/Bisexual female	161	16.0†
					Heterosexual female	2,271	9.2
				Any depressive disorder (lifetime)	Gay/bisexual male	84	9.7
					Heterosexual male	1,982	10.5
					Lesbian/Bisexual female	161	24.7†
					Heterosexual female	2,271	17.2
Cochran et al.	2003	National Survey of Midlife Development in the United States	USA	Major depression (past 12 months)	Gay/bisexual male	37	31.0†
					Heterosexual male	1,239	10.2
					Lesbian/bisexual Female	37	33.5
					Heterosexual Female	1,604	16.8
Diamant & Wold	2003	Los Angeles County Health Survey (1999)	USA	Diagnosed depression (lifetime)	Lesbian female	43	20.9
					Bisexual female	69	13.0
					Heterosexual female	4,023	10.6
Gilman et al.	2001	National Comorbidity Survey (1990-1992)	USA	Any mood disorder (12 months)	Male w/same sex partner	74	11.7
					Male w/opposite sex partner	2,310	8.0
					Female w/same sex partner	51	35.1*
					Female w/opposite sex partner	2,475	13.9
Cochran & Mays	2000	National Household Survey on Drug Abuse (1996)	USA	Major depression (last 12 months)	Male w/same sex partner	98	13.3†
					Male w/opposite sex partner	3,922	5.1
					Female w/same sex partner	96	15.0
					Female w/opposite sex partner	5,792	8.4
Cochran & Mays	2000	National Health and Nutrition Examination Survey (1988-1994)	USA	Major depression (lifetime)	Male w/same sex partner	78	15.3
					Male w/opposite sex partner	3,214	6.5
Sandfort et al.	2001	Netherlands Mental Health Survey and Incidence Study (1996)	Netherlands	Any mood disorder (last 12 months)	Gay males	82	17.1†
					Heterosexual males	2,796	5.2
					Lesbian females	43	14.0†
					Heterosexual females	3,077	9.3
				Any mood disorder (lifetime)	Gay males	82	39.0†
					Heterosexual males	2,796	13.3

Author(s)	Year	Survey (Year of survey)	Location	Measure	Group	n	Prevalence (%)
					Lesbian females	43	48.8†
					Heterosexual females	3,077	24.3
Targeted/convenience sample							
Wong et al. #	2008	Own	China	Depression (CES-D >15)	Gay identified "money boys"	192	63.0
					Non-gay identified "money boys"	47	51.0
Fergusson et al.	2005	Christchurch Health and Development Study	NZ	Major depression (whilst aged 21-25)	Gay male	7	71.4*
					Heterosexual male	441	14.5
					Lesbian female	20	50.0*
					Heterosexual female	411	24.3
Whitbeck et al.	2004	Own	USA	Major depression	Gay male (homeless/runaway youth)	19	42.1*
					Heterosexual male (homeless/runaway youth)	168	24.4
					Lesbian female (homeless/runaway youth)	44	40.9
					Heterosexual female (homeless/runaway youth)	197	32.0
Noell & Ochs[1]	2001	Own	USA	Diagnosis of depression (lifetime)	Gay/bisexual males (homeless youth)	-	18.2
					Heterosexual males (homeless youth)	-	10.3
					Lesbian/bisexual females (homeless youth)	-	24.7
					Heterosexual females (homeless youth)	-	27.7
Valanis et al.[2]	2000	Women's Health Initiative	USA	Depression (CES-D)	Lifetime lesbian females	264	16.5†
					Adult lesbian females	309	15.0†
					Bisexual females	740	15.4†
					Heterosexual females	90,578	11.1
Fergusson et al.	1999	Christchurch Health and Development Study	NZ	Major depression (whilst aged 14-21)	Gay/lesbian/bisexual	28	71.4*
					Heterosexuals	979	38.2

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken
[1] Statistical analysis not undertaken by gender
[2] Analysis compared combined lesbian/bisexual group with heterosexual women

In summary, across the three types of evidence examined here (GLBT samples alone, studies absent of prevalence, and GLBT studies with a non-GLBT comparison group and reporting prevalence) we find that the vast majority of studies report significantly higher rates of depression/mood disorders for GLBT groups. But the pattern that emerges is somewhat murkier in relation to male versus female GLBT: in some studies non-significant differences were found between gay and heterosexual males (eg. Cochran, et al., 2007b; Gilman, et al., 2001); in other studies there were non-significant differences between lesbian and heterosexual women (Cochran, et al., 2003; Whitbeck, et al., 2004). As such, it is difficult to discern with any great certainty whether there is a gender effect related to depression amongst GLBT. However, given that the majority of studies have shown significantly elevated rates of mood disorders among GLBT respondents, it is reasonable to suggest that this population is at greater risk of developing these disorders.

2.2.2 Australian findings: Depression

In addition to the international literature, high levels of mood disorders have been observed amongst the Australian GLBT community. Pitts et al. (2006) found that 33% of the *Private Lives* cohort reported being diagnosed with depression by a doctor; indeed depression was the most commonly reported condition of 21 disorders and diseases queried. In terms of previous history of depression, 73.7% reported experiencing depression in their lifetime (his study employed the Prime-MD diagnostic questionnaire to assess depression). Specifically, 32.4% of the cohort reported loss of interest or pleasure in doing things and 41.2% reported feeling down, depressed or hopeless. Of these individuals: *(i)* 55.4% reported trouble falling asleep or sleeping too much; *(ii)* 70.1% endorsed feeling tired or having little energy; *(iii)* 41.7 % experienced poor appetite or over-eating; *(iv)* 32.4% reported little interest or pleasure in doing things; *(v)* 41.2% endorsed feeling down, depressed or hopeless; *(vi)* 37% reported feeling bad about themselves; *(vii)* 23.7% experienced trouble concentrating; *(viii)* 23.9% endorsed change in activity levels; and *(ix)* 15.7% reported feeling that they would be better off dead. In terms of overall prevalence, a major depressive episode is defined when a respondent endorses one or both of the gate questions and reports five or more of the remaining nine items. In total, 24.4% of the cohort met diagnostic criteria for a major depressive episode.

Dysthymic disorder is characterised as a less intense variant of depressed mood, which has been present and played a significant impact on an individual's functioning for the majority of days over the past two years. Pitts et al. (2006) found that 32.9% of the *Private Lives* cohort reported feeling depressed or had little interest in doing things on more than half of the days in the past two years. Of these respondents, 85.6% reported that they found it hard to work, take care of things at home, or get along with others.

Rogers et al. (2004) examined the prevalence of mood disorders among a clinical cohort of 542 homosexually active men in Adelaide, who were enrolled in a HIV care and prevention programme. The authors found that 30% met diagnostic criteria for a major depressive episode and 27% met criteria for a current dysthymic disorder at the time of enrolment to the study. As a comparison, the authors cite findings from a Canadian primary health care unit where 3.9% of adult males were diagnosed with dysthymic disorder. It should be noted that the rates of major depressive episode and dysthymic disorder reported by Rogers et al. are not mutually exclusive, since 19% of the cohort had a major depressive episode that overlapped on a dysthymic disorder. In general, 38% of the cohort met criteria for one or other mood disorders, and 48% had a lifetime prevalence of major depression.

Finally, among a sample of GLBT individuals in Sydney reporting regular methamphetamine use, Matheson et al. (2010) found that 44% of respondents experienced depression, whilst a smaller proportion (10%) reported bipolar disorder.

Other Australian studies have not reported prevalence data, but have indicated a relationship between sexuality and depression. Donald & Dower (2002) analysed a sample of 3,082 adolescents and young adults in Queensland. The authors found a relationship between "sexual identity conflict" and depressive symptomatology; those who had experienced some distress related to their sexual identity scored significantly higher on the CES-D depression scale. Jorm et al. (2002) also found significantly higher depression scores among homosexual and bisexual respondents compared to heterosexual, with the bisexual group scoring the highest on that measure. McLaren, Jude, & McLachlan (2007) surveyed 136 heterosexual men and 137 homosexual men in Australia, finding that the homosexual group scored significantly higher on the Depression subscale of the Depression Anxiety Stress Scales. In another study, Nicholas and Howard (1998) recruited young gay men and heterosexual men aged 18-24 from the greater Sydney area, finding no significant difference between the groups on depression symptoms (prevalence figures were not reported).

Turning to those Australian studies which reported the prevalence of depression/mood disorders in GLBT and included a heterosexual comparison group, there was only one such study located (see Table 5). In the Australian Longitudinal Study on Women's Health, McNair et al. (2005) found that in the younger cohort, "mainly heterosexual" (24.2%), bisexual (29.6%) and homosexual females (26.2%) all reported a significantly higher prevalence of diagnosed depression compared to "exclusively heterosexual" females (10.9%). In the mid-age cohort, only the "mainly heterosexual" group reported a higher prevalence (21.8% to 11.2%). In regards to self-reported depression, the patterns were similar (see Table 5).

Table 5: Prevalence of mood disorders/depression among GLBT; Australian studies with a non-GLBT comparison group

Author(s)	Year	Survey	Measure	Population	n	Prevalence (%) (SD)
McNair et al.	2005	Australian Longitudinal Study on Women's Health	Doctor-diagnosed depression in last four years	Exclusively heterosexual females (aged 22-27)	8,132	10.9
				Mainly heterosexual females (aged 22-27)	603	24.2†
				Bisexual females (aged 22-27)	73	29.6†
				Homosexual females (aged 22-27)	90	26.2†
				Exclusively heterosexual females (aged 50-55)	8,207	11.2
				Mainly heterosexual females (aged 50-55)	606	21.8†
				Bisexual females (aged 50-55)	73	8.7
				Homosexual females (aged 50-55)	90	18.4
			Self-reported depression in last year	Exclusively heterosexual females (aged 22-27)	8,132	18.7
				Mainly heterosexual females (aged 22-27)	603	37.6†
				Bisexual women (aged 22-27)	73	46.3†
				Homosexual females (aged 22-27)	90	40.7†
				Exclusively heterosexual females (aged 50-55)	8,207	32.8
				Mainly heterosexual females (aged 50-55)	606	51.3†
				Bisexual females (aged 50-55)	73	35.2
				Homosexual females (aged 50-55)	90	26.5
Original analyses: Carragher, Matthew-Simmons, Ritter	2007	National Survey of Mental Health and Wellbeing.	Major depression (lifetime)	Homosexual/bisexual	199	25.83 (3.04)*
				Heterosexual	8,639	14.59 (0.48)
			Bipolar disorder (lifetime)	Homosexual/bisexual	199	5.79 (1.79)
				Heterosexual	8,639	1.26 (0.19)

Notes
* statistically significant from heterosexual group ($p < 0.05$)
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)

As described earlier (see page 20) we undertook our own analyses of the 2007 NSMHWB in relation to mood disorders in homosexual/bisexual NSMHWB respondents compared to heterosexual respondents. The findings are given in Table 5 (above). Lifetime diagnosis of major depression was significantly more common amongst homosexual/bisexual respondents (25.83%) compared to heterosexual respondents (14.59%). Bipolar disorders were also more common, but this difference did not reach statistical significance.

2.3 Schizophrenia/psychosis

The existing literature on schizophrenia/psychosis and GLBT is slim, relative to anxiety and depressive disorders. Given that it is a low prevalence disorder, this is not surprising. From the USA, Bolton and Sareen (2011) found that gay males had a higher prevalence of schizophrenia or psychotic illness (lifetime) when compared to heterosexual males (9.3% to 2.7%). In the same study, bisexual women had a higher prevalence of schizophrenia or psychotic illness compared to heterosexual females (9.2% to 3.4%), however there was no difference between lesbian (2.9%) and heterosexual females. Chakraborty et al. (2011) found elevated prevalence of "probable psychosis" among non-heterosexuals in an English population sample. Of the heterosexual sample, 0.38% satisfied the criteria compared to 1.4% of the non-heterosexual sample. However, after controlling for age, gender, ethnicity and education, the difference between these groups was not significant.

In terms of Australian literature, Matheson et al. (2010) employed a seven item psychosis screener (as used in the NSMHWB) to examine rates of positive screening for schizophrenia or schizoaffective disorder for GLBT methamphetamine users. A positive screening was indicated by a score of 3 or more. The authors found that 10% of those GLBT individuals in Sydney reporting regular methamphetamine use were at increased risk of screening positive for schizophrenia or schizoaffective disorder. A larger proportion (64%) of the cohort reported experiencing at least one psychotic symptom in the year prior to interview. Given that this sample were all methamphetamine users, this high rate of psychotic symptomatology is not unexpected.

In our own analysis of the NSMHWB, examining the variable of medically diagnosed schizophrenia, we found a heightened rate for homosexual/bisexual respondents (3.51%) compared to heterosexual respondents (0.72%) but this did not reach statistical significance.

2.4 Suicidality

While we have largely focussed our review on diagnoses of mental health, the issue of suicidality has been frequently raised in relation to GLBT populations, as a relationship between sexual orientation and non-fatal suicide attempts has been repeatedly observed worldwide (Haas et al., 2010). The following section describes research that has investigated the relationship between suicide attempts and sexual orientation. [6]

2.4.1 International literature: Suicidality

Six studies reported a rate of attempted suicide in a GLBT-only sample (Botnick, Heath, Cornelisse, Strathdee, Martindale, & Hogg, 2002; Clements-Nolle, et al., 2006; D'Augelli, Hershberger, & Pilkington, 2001; Hammelman, 1993; Plöderl, Faistauer, & Fartacek, 2010; Warner, McKeown, Griffin, Johnson, Ramsay, Cort, & King, 2004). Among these studies, the

[6] Suicide is a key feature of depression and depression assessment instruments. This section focuses on literature where self-harm and suicidal thoughts and attempts have been queried independently from depression.

reported lifetime prevalence of attempted suicide among GLBT individuals ranged from 18% in a sample of gay and bisexual males in Austria (Plöderl, et al., 2010) to 42% (lifetime suicide attempts) in a sample of gay, lesbian and bisexual youth (D'Augelli & Hershberger, 1993).

When compared to heterosexuals, research suggests that GLBT populations have a higher prevalence of past suicide attempts (see Table 6 for all comparative studies). Overall, the search obtained 28 international studies which reported the prevalence of suicide attempts, and 25 of these found a significant difference between GLBT and heterosexual populations with regard to the prevalence of suicide attempts.

Bolton and Sareen's (2011) analysis of the NESARC in the United States found that 2.1% of heterosexual men had ever attempted suicide in their lives, compared to 9.8% of gay men, and 10% of bisexual men. The same pattern was repeated for female respondents. 4.2% of heterosexual women reported a lifetime suicide attempt, compared with 10.9% of lesbian women, and 24.4% of bisexual women. After accounting for a range of demographic factors in a logistic regression analysis, these differences remained significant. Gay and bisexual men were more than 4 times more likely to have attempted suicide than heterosexual men. Lesbian women were 3 times more likely, whilst bisexual women were almost 6 times more likely to have attempted suicide when compared to heterosexual women.

A number of studies have focused on youth populations, and have also demonstrated a higher prevalence of past suicide attempts among young GLBT populations (see Table 6). For example, Eisenberg & Resnick (2006) analysed a survey of school students; the Minnesota Student Survey. They found that both lesbian/bisexual females and gay/bisexual males had a significantly higher prevalence of lifetime suicide attempts, compared to their heterosexual counterparts. The highest prevalence was found among lesbian/bisexual females, with 52.4% of that group having attempted suicide in their lifetime.

Bontempo and D'Augelli (2002) analysed data from the Massachusetts and Vermont Youth Risk Behavior Surveys (MYRBS/VYRBS) and found that GLB male and female youth had on average a greater number of suicide attempts, compared to their heterosexual counterparts. Furthermore, there were large differences in the prevalence of recent suicide attempts. 20.4% of gay and bisexual males had at least four suicide attempts in the past year, compared to just 1.2% of heterosexual males in the sample. Similarly, 10.8% of lesbian or bisexual females had at least four suicide attempts in the past year, compared to 1.4% of heterosexual females.

Goodenow, Szalacha, & Westheimer (2006) and Robin et al. (2002) also examined the MYRBS/VYRBS. Goodenow et al. (2006) found significantly higher prevalence of past year suicide attempts among the GLB group, whereas Robin et al. (2002) found significantly higher prevalence of suicide attempts among those who had *both* sex partners only (i.e. bisexual), and not those who had same sex partners only. Garofalo et al. (1999) found that gay, lesbian, bisexual, or 'not sure' orientation was predictive of reported suicide attempts youth in the MYRBS. However, among females, the increased suicide risk associated with GLBT orientation was evident only in the bivariate, and not the multivariate analyses (prevalence was not reported for males/females individually).

Zhao et al. (2010) analysed the 2004 Quebec Youth Risk Behaviour Survey. The authors found that 29.3% of male and female youth who self-identified as GLB had an attempted suicide during the past 12 months, compared to 8.2% of heterosexual students. Of those who identified as heterosexual but had same sex attraction or behaviour, 13% had attempted suicide in the past 12 months, which was not significantly higher than the heterosexual group.

Wichstrøm & Hegna (2003) surveyed a large sample of Norweigan students, and found that those groups with same sex experience, attraction, or GLBT identity, all had a significantly higher prevalence of lifetime suicide attempts, than heterosexual students. The group with the highest prevalence of suicide attempts were those with same sex contact. Safren & Heimberg, (1999) surveyed a small sample of young people in Philadelphia, and found significantly higher prevalence of suicide attempts in the GLBT group[7].

Research has also been undertaken of homeless youth/runaway populations. Whitbeck et al. (2004) found that lesbian homeless/runaway youth had a significantly higher prevalence of lifetime suicide attempts (63.6% to 37.1%), but while there was a similar difference between gay and heterosexual males in this sample, the difference for males was not statistically significant. Noell & Ochs (2001) also surveyed a sample of homeless adolescents in Portland, Oregon, and found higher prevalence of lifetime suicide attempts among gay/bisexual males and lesbian/bisexual females, compared to their heterosexual peers. Van Heerignen & Vincke (2000) surveyed samples of Belgian youth, and found similar findings to that of Whitbeck (2004). There was a significantly higher prevalence of suicide attempts for lesbian/bisexual female youth compared with heterosexual females (25% to 5%), however the difference between gay/bisexual and heterosexual males was not statistically significant.

There were also some differential findings in those other general population studies which divided the sample by gender, however the overall evidence suggests higher risk of suicidality for both GB males and LB females (see Table 6). In regards to males, Cochran et al. (2007b) found a significantly higher prevalence of suicide attempts in the past 12 months among gay/bisexual males compared to heterosexual (in the NLASS), but no difference between lesbian/bisexual and heterosexual females (the differences between GLB and heterosexuals were also not significant in regards to *lifetime* suicide attempts). Remafedi et al. (1998) also found a significantly higher prevalence of lifetime suicide attempts among gay/bisexual males, but not lesbian/bisexual females, in their analysis of the Adolescent Health Survey. Significant differences were also found by Bagley and Tremblay (1997) and Cochran & Mays (2000a), however these studies did not include a female sample.

In contrast, Hughes et al. (2000) surveyed a sample of lesbian and heterosexual women in two U.S. cities, finding that 22% of the lesbian sample had attempted suicide, compare to 13% of the heterosexual sample. Similarly, Kuang et al. (2003) surveyed a sample of women in Taiwan using online methods, and found that the prevalence of those reporting a lifetime "serious suicide attempt" was higher among lesbian/bisexual women (38.2%) than heterosexual women (27.3%).

In addition, there were 8 studies which utilised a population/random sample, but did not separate males and females in the analysis (Chakraborty, et al., 2011; Faulkner & Cranston, 1998; Garofalo, et al., 1999; Goodenow, et al., 2006; Robin, et al., 2002; Safren & Heimberg, 1999; Wichstrøm & Hegna, 2003; Zhao, et al., 2010). Every one of these studies found some significant differences between the GLB and heterosexual sample. For example, Chakraborty et al. (2011) found that in the Adult Psychiatric Morbidity Survey, non-heterosexual English citizens were 2.2 times more likely to have attempted suicide at least once in their lives, compared to heterosexuals (after adjusting for demographic factors).

[7] Other studies do not report prevalence figures, but did show a relationship between sexuality and suicidality. Borowsky et al. (2001) found that experiencing a same-sex romantic attraction predicted attempting suicide among black, Hispanic, and white boys, as well as among black and white girls, indicating that homosexual orientation is likely to be a risk factor for suicidal behaviour across gender and racial/ethnic groups (no prevalences were reported). Leslie et al. (2002) (not shown in Table 6 as no prevalence figures reported) found that homosexuality was a significant predictor of suicidality among homeless/runaway boys, but not girls.

Thirteen studies used a convenience/targeted sample (as opposed to a population/random sample: see Table 6). In their analyses of Christchurch Health and Development Study, Fergusson et al. (1999) found a significantly higher prevalence of suicide attempts for both GLBT males and females in the cohort whilst aged between 16 and 21, and in their later study also found a higher prevalence of suicide attempts in the GLBT group when aged 21 to 25. Skegg et al. (2003) analysed data from a longitudinal cohort study undertaken in Dunedin, New Zealand. Males in the sample with same sex attraction had a significantly higher prevalence of suicide attempts compared to those with opposite sex attraction, however there was no significant difference between females with same and opposite sex attraction on this particular measure (there were differences on other suicide related measures in the study). Mathy (2002a) analysed data from the Human Sexuality Study, which was undertaken in five continents. The results differed for males and females in each continent, showing some geographic variation. Gay and bisexual males were significantly more likely to report a lifetime suicide attempt in Asia, North America and South America (but not Australia or Europe). Lesbian and bisexual women were more likely to report a suicide attempt in North America only. Herrell et al. (1999) examined the prevalence of attempted suicide among a cohort of male twins who has discordant sexuality (one of the twins had had male sexual partners, whilst the other had not). Overall, there were 103 pairs of twins. Among those who had had male sexual partners, 14.7% had a lifetime suicide attempt, compared to 3.9% of those who had opposite sex partners only.

De Graaf et al. (2006) analysed the Netherlands Mental Health Survey and Incidence Survey, which measured the prevalence of psychiatric symptoms and disorders in a representative sample of the Dutch population. Whilst this study did not measure the prevalence of suicide attempts (hence not included in Table 6), it did measure symptoms of suicidality, including ideation, "death wishes", contemplation and deliberate self harm. The study found that homosexual men had a higher prevalence of all of these symptoms compared to heterosexual men, however, homosexual women had a higher prevalence of suicide contemplation only, and not the other three symptoms measured. Other studies to show a significant relationship between sexual orientation and suicidality (but not reporting prevalence) include Russell & Joyner (2001) and Leslie et al. (2002).

Finally, a smaller number of studies have shown no relationship between sexual orientation and suicidality (see Table 6). Garcia (2002) surveyed a small sample (n=138) of university students in San Diego, and found no difference in the prevalence of suicide attempts between GLBT and heterosexual students. In their analysis of the NCS, Gilman et al., (2001) found no significant relationship between suicide attempts and reporting same sex partners. Bernhard and Applegate (1999) found no difference in suicide attempts in a sample of lesbian and heterosexual women, and Eskin et al. (2005) found no difference between GLBT and heterosexual Turkish university students on suicide attempts.[8] Overall, however, the weight of evidence demonstrates significantly elevated suicide risk in GLBT.

[8] These two studies did not report prevalence data.

Table 6: Prevalence of suicide attempts among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Survey (Year undertaken)	Country	Measure	Group	n	Prevalence (%)
General population/ random samples							
Bolton & Sareen	2011	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Suicide attempt (lifetime)	Gay males	190	9.8†
					Bisexual males	81	10.0†
					Heterosexual males	14,109	2.1
					Lesbian females	145	10.9†
					Bisexual females	161	24.4†
					Heterosexual females	19,489	4.2
Chakraborty et al.	2011	Adult Psychiatric Morbidity Survey (2007)	England	Suicide attempt (lifetime)	Non-heterosexuals	650	8.9†
					Heterosexuals	6,811	5.3
					Any same gender partners	667	9.2†
					Opposite gender partners	6,794	5.1
Zhao et al.	2010	Quebec Youth Risk Behaviour Survey	Canada	Suicide attempt (past 12 months)	GLBT (youth)	1,624	29.3*
					Heterosexual identity with same sex attraction/behaviour (youth)	115	13.0
					Heterosexuals (youth)	58	8.2
Cochran et al.	2007	National Latino and Asian American Survey (2002-2003)	USA	Suicide attempt (past 12 months)	Gay/bisexual males	84	2.4†
					Heterosexual males	1,982	0.3
					Lesbian/bisexual females	161	2.4
					Heterosexual females	2,271	0.6
				Suicide attempt (lifetime)	Gay/bisexual males	84	8.0
					Heterosexual males	1,982	2.3
					Lesbian/bisexual females	161	8.5
					Heterosexual females	2,271	5.2
Eisenberg & Resnick	2006	Minnesota Student Survey	USA	Suicide attempt (lifetime)	Lesbian/bisexual females (youth)	803	52.4†
					Heterosexual females (youth)	10,452	24.8
					Gay/bisexual males (youth)	1,452	29.0†
					Heterosexual males (youth)	9,220	12.6
Goodenow et al.	2006	Massachusetts Youth Risk Behavior Survey	USA	Suicide attempt (12 months)	Gay/lesbian/bisexual (youth)	202	28.5*
					Heterosexual (youth)	3,435	6.9
Wichstrom & Hegna	2004	Young in Norway Study	Norway	Suicide attempt (lifetime)	Same sex contact	?	15.4*
					Same sex attraction	?	9.1*
					GLBT identity	?	9.1*
					Heterosexual	?	3.6

Author(s)	Year	Survey (Year undertaken)	Country	Measure	Group	n	Prevalence (%)
Bontempo & D'Augelli	2002	Massachusetts/Vermont Youth Risk Behavior Surveys	USA	Four or more suicide attempts in past 12 months	Lesbian/bisexual females (youth)	119	10.8*
					Heterosexual females (youth)	4,457	1.4
					Gay/bisexual males (youth)	196	20.4*
					Heterosexual males (youth)	4,416	1.2
Robin et al.	2002	Massachusetts/Vermont Youth Risk Behavior Surveys	USA (VT)	Suicide attempt (past 12 months)	Same sex partners (youth)	249	16.5
					Both sex partners (youth)	336	43.5†
					Opp. Sex partners (youth)	6,873	11.9
			USA (MA)	Suicide attempt (past 12 months)	Same sex partners (youth)	106	18.5
					Both sex partners (youth)	122	52.2†
					Opp. Sex partners (youth)	3,948	12.4
Gilman et al.	2001	National Comorbidity Survey	USA	Suicide attempt (12 months)	Males w/same sex partner	74	1.5
					Males w/opposite sex partner	2,310	0.6
					Females w/same sex partner	51	0.6
					Females w/opposite sex partner	2,475	1.0
Cochran & Mays	2000	NHANES III	US	Suicide attempt (lifetime)	Males w/same sex partner	78	19.3†
					Males w/opposite sex partner	3214	3.6
Garofalo et al.	1999	Massachusetts Youth Risk Behavior Survey (1995)	USA	Suicide attempt (past 12 months)	Gay/lesbian/bisexual (youth)	84	35.3*
					Heterosexual (youth)	3,236	9.1
Faulkner & Cranston	1998	Massachusetts Youth Risk Behavior Survey (1993)	USA	Suicide attempt (past 12 months)	Same sex contact (youth)	105	27.5*
					Opposite sex contact only (youth)	1,563	13.4
Remafedi	1998	Adolescent Health Survey (1999)	USA	Suicide attempt (lifetime)	Gay/bisexual males	212	28.1†
					Heterosexual males	184	4.2
					Lesbian/bisexual females	182	20.5
					Heterosexual females	152	14.5
Bagley & Tremblay	1997	Own	Canada	Suicide attempt (lifetime)	Active homosexual males	32	3.1*
					Active bisexual males	37	5.4*
					Active heterosexual males	544	0.5
Targeted/convenience sample							
Ploderl[1]	2010	Own	Austria	Suicide attempt (lifetime)	Gay/bisexual males	70	7.0
					Heterosexual males	75	0.0
					Lesbian/bisexual females	72	13.0
					Heterosexual females	73	4.0
Fergusson et al.	2005	Christchurch Health and Development Study	NZ	Suicide attempt (whilst aged 21-25)	Gay males	7	28.6*
					Heterosexual males	441	1.6
					Lesbian females	20	10.0*

Author(s)	Year	Survey (Year undertaken)	Country	Measure	Group	n	Prevalence (%)
					Heterosexual females	411	1.5
Whitbeck et al.	2004	Own	USA	Suicide attempt (lifetime)	Gay males (homeless/runaway adolescents)	19	42.1
					Heterosexual males (homeless/runaway adolescents)	168	29.8
					Lesbian females (homeless/runaway adolescents)	44	63.6*
					Heterosexual females (homeless/runaway adolescents)	197	37.1
Kuang et al.	2004	Own	Taiwan	Serious suicide attempt (lifetime)	Lesbian/bisexual females	280	38.2*
					Heterosexual females	267	27.3
Skegg et al.	2003	Dunedin Multidisciplinary Health and Development Study	New Zealand	Suicide attempt (lifetime)	Minor same sex attracted males	45	16.0*
					Major same sex attracted males	8	25.0*
					Opposite sex attracted males	427	6.0
					Minor same sex attracted females	110	11.0
					Major same sex attracted females	9	33.0
					Opposite sex attracted females	343	9.0
Garcia et al.	2002	Own	USA	Suicide attempt (lifetime)	Lesbian/bisexual females (youth)	17	18.0
					Heterosexual females (youth)	66	8.0
					Gay/bisexual males (youth)	14	14.0
					Heterosexuals males (youth)	55	10.0
Mathy	2002	Human Sexuality Study	Asia	Suicide attempt (lifetime)	Gay/bisexual male	28	10.7*
					Heterosexual males	364	2.2
			Australia	Suicide attempt (lifetime)	Gay/bisexual males	35	17.1
					Heterosexual males	169	5.3
			Europe	Suicide attempt (lifetime)	Gay/bisexual males	44	4.5
					Heterosexuals males	351	3.1
			North America	Suicide attempt (lifetime)	Gay/bisexual males	3,754	8.3*
					Heterosexuals males	25,652	3.8
			South America	Suicide attempt (lifetime)	Gay/bisexual males	26	11.5*
					Heterosexuals males	152	2.0
			Asia	Suicide attempt (lifetime)	Lesbian/bisexual females	7	14.3
					Heterosexual females	36	13.9
			Australia	Suicide attempt (lifetime)	Lesbian/bisexual females	8	12.5
					Heterosexual females	31	6.5

Author(s)	Year	Survey (Year undertaken)	Country	Measure	Group	n	Prevalence (%)
			Europe	Suicide attempt (lifetime)	Lesbian/bisexual females	4	0.0
					Heterosexual females	48	8.3
			North America	Suicide attempt (lifetime)	Lesbian/bisexual females	1,048	17.1*
					Heterosexual females	5,499	9.1
			South America	Suicide attempt (lifetime)	Lesbian/bisexual females	2	0.0
					Heterosexual females	37	2.7
Noell & Ochs[1]	2001	Own	USA	Suicide attempt (lifetime)	Gay/bisexual males (homeless youth)	?	44.2*
					Heterosexual males (homeless youth)	?	33.0
					Lesbian/bisexual females (homeless youth)	?	52.6*
					Heterosexual females (homeless youth)	?	41.9
Hughes et al.	2000	Own	USA	Suicide attempt (lifetime)	Lesbian females	550	22.0*
					Heterosexual females	279	13.0
van Heeringen & Vincke	2000	Own	Belgium	Suicide attempt (lifetime)	Gay/bisexual males (youth)	137	12.4
					Heterosexual males (youth)	71	5.9
					Lesbian/bisexual females (youth)	82	25.0*
					Heterosexual females (youth)	114	5.5
Herrell et al.	1999	Own	USA	Suicide attempt (lifetime)	Twins with same gender partner	103	14.7*
					Twins without same gender partner	103	3.9
Fergusson, Horwood & Beautrais	1999	Christchurch Health and Development Study	NZ	Suicide attempt (lifetime)	Gay/lesbian/bisexual	28	32.1*
					Heterosexual	979	7.1
Safren & Heimburg	1999	Own	USA	Suicide attempt (lifetime)	Gay/lesbian/bisexual (youth)	56	30.0*
					Heterosexual (youth)	48	13.0

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken
[1] Statistical analysis not undertaken by gender

2.4.2 Australian findings: Suicidality

As with the international work, there are a greater number of Australian studies of suicidality than in other areas of mental health. Based on a clinical sample of 542 homosexually active men in Adelaide, South Australia, Rogers et al. (2004) found that one quarter reported having ever attempted suicide. Some of the men enrolled in the sample committed suicide during study follow-up. The authors estimated a raw suicide rate of 3.6 per 1,000 per annum for the cohort which, based on data from the Australian Bureau of Statistics, they note is 10 times the annual suicide rate for Australian men (i.e. 0.37 per 1,000 amongst those within a similar age range of 25-44 years).

More recently, Matheson et al. (2010) examined the prevalence and patterns of substance use and co-occurring mental health problems as well as health service and treatment uptake rates among the GLBT community in Sydney who report regular methamphetamine use (n = 116). The authors observed high levels of suicidal ideation history. In particular, 72% had ever thought about suicide (61% of men vs. 85% of women), with 22% of the sample reporting suicidal thoughts within the three months prior to interview. Moreover, 35% had attempted suicide at some point in their life.

Hillier and colleagues have conducted three large national studies examining the sexuality, health and well-being of same-sex attracted (SSA) young Australians aged 14-21 years. These surveys were conducted in 1998 (n = 750), 2004 (n = 1,749), and 2010 (n = 3,134). The 2010 survey included questions about self-harm and suicide, queried mainly within the context of homophobic abuse experiences or support/rejection from family members, friends, or other professionals. However, the majority of the findings relating to self-harm and suicide are presented as qualitative data. Hillier et al. (2010) note that gender questioning young people had an increased risk of self-harm and suicide attempts, with approximately half reporting self-harm and 28% reporting a past suicide attempt.

Finally, Barbeler (1992) surveyed 200 young lesbians living within and around metropolitan Sydney. Barbeler found that those aged 14-18 years recorded the highest incidents of suicidal thoughts, with 63% contemplated suicide for reasons unrelated to sexuality and 46% for reasons due to sexuality. In comparison, of those aged 19-21 years, 24% reported suicidal thoughts related to sexuality and 51% reported suicidal thoughts for sexuality unrelated reasons. Of those aged 22-25 years, 33.5% reported suicidal thoughts due to sexuality and 51% reported suicidal thoughts for reasons unrelated to sexuality.

In terms of suicide attempts, 47.5% of the cohort reported having made a suicide attempt at some time in their life, with 31% citing their sexuality as a reason (Barbeler, 1992). More specifically, those aged 14-18 years recorded the highest proportion of suicide cases: almost 60% attempted suicide for reasons unrelated to sexuality and a further 33% attempted suicide due to sexuality. A decrease in suicide attempts was observed with the increase of age group: of those aged 22-25 years, 22% attempted suicide for reasons unrelated to sexuality and a further 9.5% attempted suicide due to sexuality.

Turning to the studies with non-GLBT comparison groups, the prevalence of suicide attempts and self-harm is particularly elevated among the GLBT community compared to the non-GLBT population (see Table 7). For instance, based on data of two age-based cohorts from the Australian Longitudinal Study on Women's Health, McNair et al. (2005) observed that both younger and mid-aged women identifying as mainly heterosexual, bisexual, and homosexual, all had a higher prevalence of feeling that "life was not worth living" in the week prior to interview,

compared to exclusively heterosexual women. Similarly, bisexual and mainly heterosexual women (and also homosexual women in the younger age cohort only) reported a significantly higher prevalence of hurting or trying to kill themselves in the past six months, compare to exclusively heterosexual women.

Nicholas and Howard (1998) recruited young gay men and heterosexual men aged 18-24 from the greater Sydney area. Similarly, the authors of this study found that almost one third of gay men reported ever having attempted suicide compared to less than 10% of heterosexual men. A summary of these national findings is provided in Table 7. Jorm et al. (2002) also found significantly higher suicidality scores (a 5 item scale of suicidal thoughts and actions over the past year) among homosexual and bisexual respondents compared to heterosexual (prevalence data were not reported).

Table 7: Prevalence of suicide attempts among GLBT; Australian studies with a non-GLBT comparison group

Author(s)	Year	Measure	Population	n	Prevalence (%) (SD)
McNair et al.	2005	Felt life was not worth living in past week	Exclusively heterosexual females (aged 22-27)	8,214	6.5
			Mainly heterosexual females (aged 22-27)	604	10.6†
			Bisexual females (aged 22-27)	73	15.2†
			Homosexual females (aged 22-27)	90	18.2†
			Exclusively heterosexual females (aged 50-55)	9,677	7.0
			Mainly heterosexual females (aged 50-55)	121	16.1†
			Bisexual females (aged 50-55)	15	19.0†
			Homosexual females (aged 50-55)	123	14.0†
		Hurt/tried to kill themselves in past six months	Exclusively heterosexual females (aged 22-27)	8,214	2.7
			Mainly heterosexual females (aged 22-27)	605	11.1†
			Bisexual females (aged 22-27)	73	18.7†
			Homosexual females (aged 22-27)	90	17.3†
			Exclusively heterosexual females (aged 50-55)	9,677	0.8
			Mainly heterosexual females (aged 50-55)	121	4.0†
			Bisexual females (aged 50-55)	15	16.1†
			Homosexual females (aged 50-55)	123	2.0
Nicholas & Howard#	1998	Suicide attempt	Gay males	57	28.1
			Heterosexual males	54	7.4
Original analyses: Carragher, Matthew-Simmons, Ritter	2007	Suicidal thoughts (lifetime)	Homosexual/bisexual	199	34.73 (4.08)*
			Heterosexual	8,637	12.83 (0.46)
		Suicidal plans (lifetime)	Homosexual/bisexual	199	17.07 (3.17)*
			Heterosexual	8,637	3.71 (0.30)
		Suicide attempts (lifetime)	Homosexual/bisexual	199	12.60 (2.50)*
			Heterosexual	8,637	3.08 (0.21)

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken

Again, we conducted our own analyses of the NSMHWB on the three suicidality-related variables: suicidal thoughts; suicidal plans; and suicide attempts. The results are given in Table 7. We found statistically significant differences between homosexual/bisexual respondents and heterosexual respondents on each of these three measures – all indicating higher rates of suicidality amongst the homosexual/bisexual group.

2.5 Summary and conclusions: Mental health and GLBT

We acknowledge that there are a number of limitations in the mental health epidemiological research presented here. The majority of the studies come from the United States; the measurement of mental health disorders has varied between studies; the definition of GLBT has varied between studies; the sample sizes were often small; and much of the literature did not cover a random population sample, and include a non-GLBT comparison group.

Despite these limitations, a number of sound conclusions can be drawn regarding the prevalence rates of mental health disorders amongst GLBT relative to heterosexual individuals, as summarised below.

Anxiety disorders

Taken together across all anxiety disorders, a majority of the studies reviewed show a higher prevalence of anxiety disorders among GLBT respondents compared to heterosexual respondents. An increased prevalence was more commonly found for non-heterosexual women than men, which may suggest that lesbian and bisexual women are at particular risk for these types of disorders.

- International literature (n=12 studies with a non-GLBT comparison group) demonstrates that GLBT people are more than twice as likely to have anxiety disorders.
- The majority of these studies find significantly higher rates in lesbian/bisexual women.
- Australian studies provide less strong evidence, especially for lesbian and bisexual women, where anxiety disorders may be less common than in heterosexual groups (McNair, et al., 2005).
- Our own analyses of the NSMHWB found non-significant differences between heterosexuals and homosexuals on GAD and panic disorder; but did find significant difference on social phobia (higher among GLBT). However, we were not able to analyse by gender, which potentially concealed the gender differences highlighted in other studies.

Depression/mood disorders

Across the three types of evidence examined here (studies of GLBT samples only, studies with a non-GLBT comparison group, and other studies that did not report prevalence data) we find that the vast majority of studies report significantly higher rates of depression/mood disorders for GLBT groups.

- Of the international studies, 14 of the 18 demonstrated some higher rates of depression amongst GLBT populations than heterosexual populations. This included either gay or bisexual men and lesbian or bisexual women (whereas others found only male or only female differences).

- In a majority of population studies, the highest rates of depression/mood disorders appear to be found among lesbian/bisexual women in particular.
- Australian comparison research (McNair et al., 2005) found higher prevalence of depression among non-heterosexual women.
- Our own analyses of the NSMHWB found significant differences in major depressive disorder rates between GLBT and non GLBT populations, with a higher rate in GLBT people.

Suicidality

The evidence regarding suicidality examined here provides perhaps the clearest indication of increased risk among GLBT individuals. Research has consistently demonstrated that GLBT individuals attempt suicide at a greater rate than heterosexuals.

- In the international comparison studies, 25 of 28 found a significantly higher prevalence of past suicide attempts among a GLBT population.
- Australian data on suicidality amongst GLBT with heterosexual comparison group found particularly high prevalence of suicidality among bisexual females.
- Our own analyses of the NSMHWB demonstrates significantly elevated rates of suicidal thoughts, plans and attempts in GLBT samples compared to heterosexual samples.

Overall, we find strong evidence for higher rates of suicidality, depression and to a lesser extent anxiety disorders among GLBT groups, when compared to heterosexuals. We explore the potential reasons for such elevated rates of mental health problems in Chapter 4 of this report. We now turn to alcohol and other drugs.

3. ALCOHOL AND OTHER DRUG USE AMONG GAY, LESBIAN, BISEXUAL AND TRANSGENDER POPULATIONS

Alcohol and drug use can be measured in different ways. A majority of the studies of GLBT populations described here measured the proportion of the population that had used alcohol or drugs in the past 6 or 12 months (or some other time period) along with some measure of frequency of consumption. The importance of measuring frequency of use is highlighted in a study undertaken by Faulkner and Cranston (1998) of high school students in Massachusetts. This study measured both the proportion of students that had used illicit drugs at least once in the past month, as well as the proportion that had used *every day* in the past month. The survey found little difference between those with same sex contact, and those with other sexual contact in terms of cannabis use in the past month (30.1% to 30.7%). However, there was a large difference between the groups in terms of everyday use; 12.4% of those with same sex contact used cannabis every day during that past month, whilst 3.3% of those with other-sex contact only had used cannabis every day in the past month.

A disadvantage of the quantity frequency approach is that it does not necessarily indicate a particular level of harm. A more appropriate way of measuring "problematic" drug use is by estimating the prevalence of drug *abuse* or *dependence*, according to the DSM criteria. Studies which measure drug use in this way are less common in the literature; however provide more telling information regarding the problems these populations face in relation to drug use.

As with the review of the literature pertaining to mental health above, we distinguish between the studies on AOD prevalence that included a non-GLBT comparison group and those that did not. This chapter examines each drug type in turn, commencing with tobacco.

3.1 Tobacco

3.1.1 International literature: Tobacco

Seven studies of GLBT populations without a heterosexual comparison measured tobacco use. The way that tobacco use has been measured has varied across studies; whilst some studies measured daily use, others measured use in the past 30 days or 12 months. The highest prevalence of tobacco use in these studies was measured by Berg et al. (2011), who found that 59.7% of a Chinese MSM sample reported smoking 10 or more cigarettes daily. The lowest prevalence of tobacco use in these studies was found by Lehavot & Simoni (2011), who found that 13% of a sample of lesbian/bisexual women were daily users of tobacco.

Studies which directly compared the prevalence of tobacco use between GLBT groups and non-GLBT groups are more informative. We located 15 such international studies (see Table 8). Out of these 15 studies, 12 found a significantly higher prevalence of tobacco use among the GLBT group.

Table 8: Prevalence of tobacco use among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Survey (Year undertaken)	Country	Measure	Group	n	Prevalence (%)
Population survey/random sample							
Zhao et al.	2010	Quebec Youth Risk Behaviour Survey	Canada	Tobacco use (past 30 days)	GLB (youth)	58	46.6*
					Heterosexual identity with same sex attraction/behaviour (youth)	115	45.2*
					Heterosexual (youth)	1,624	20.8
Conron, Mimiaga & Landers	2010	Massachusetts Behavioural Risk Factor Surveillance System (2001-2008)	USA	Current smoker (past 30 days)	Gay males	926	32.5†
					Bisexual males	194	35.4†
					Heterosexual males	25,387	20.6
					Lesbian females	719	26.3†
					Bisexual females	432	36.9†
					Heterosexual females	39,701	19.4
Pizacani et al.	2009	Washington/Oregon Behavioural Risk Factor Surveillance System (2003-2005)	USA	Current smoker	Gay males	543	31.7†
					Bisexual males	263	35.9†
					Heterosexual males	32,464	20.3
					Lesbian females	647	29.5†
					Bisexual females	639	35.9†
					Heterosexual females	50,293	17.3
Trocki, Drabble & Midanik	2009	National Alcohol Survey (2000)	USA	Used in past 12 months	Lesbian females	36	23.1
					Bisexual females	50	44.4†
					Heterosexual females with same sex partner	87	34.1†
					Heterosexual females	3,723	19.1
					Gay males	57	35.7
					Bisexual males	27	20.0
					Heterosexual males with same sex partner	83	25.7
					Heterosexual males	3,201	22.8
Sandfort et al.	2006	Dutch National Survey of General Practice (2001)	Netherlands	Current smoker	Gay/lesbian	143	38.5
					Bisexual	90	27.8
					Heterosexual	9,265	30.9
Burgard et al.	2005	Californian Women's Health Survey	USA	Current smoker	Females with female sexual partners	350	29.8†
					Females with male sexual partners only	10,854	17.0

McCabe, Hughes & Boyd	2004	Own	USA	Used in past 30 days	Bisexual females	49	47.0*
					Heterosexual females	2,042	22.0
Eisenberg & Wechsler	2003	College Alcohol Study	USA	Used in past 30 days	Males w/same sex partners	112	36.0
					Males w/both sex partners	83	39.0
					Males w/opposite sex partners	3896	33.0
					Females w/same sex partners	134	33.0
					Females w/both sex partners	301	51.0†
					Females w/opposite sex partners	5775	34.0
Bontempo & D'Augelli	2002	Massachusetts/ Vermont Youth Risk Behavior Surveys	USA	More than half a pack per day	Lesbian/bisexual females (youth)	119	25.5*
					Heterosexual females (youth)	4,457	5.8
					Gay/bisexual males (youth)	196	22.5*
					Heterosexual males (youth)	4,416	8.2
Fergusson, Horwood & Beautrais	1999	Christchurch Health and Development Study	New Zealand	Nicotine dependence (DSM criteria)	Gay/lesbian/bisexual	28	64.3*
					Heterosexual	979	26.7
Faulkner & Cranston	1998	Massachusetts Youth Risk Behavior Survey	USA	Current smoker	Same sex contact	105	22.9
					Opposite sex contact only	1,563	17.6
Garofalo et al.	1998	Massachusetts Youth Risk Behavior Survey	USA	Used in past 30 days	Gay/lesbian/bisexual	104	59.3*
					Heterosexual	4,055	35.2
Convenience sample							
King et al.	2003	Own	England/ Wales	Current smoker	Gay males	656	45.0
					Heterosexual males	505	45.0
					Lesbian females	430	45.0
					Heterosexual females	588	36.0
Gruskin et al.	2001	Own	USA	Current smoker	Lesbian/ bisexual females	120	25.4*
					Heterosexual females	7,993	12.6
Valanis et al.[1]	2000	Women's Health Initiative	USA	Current smoker	Lifetime lesbian females	264	10†
					Adult lesbian females	309	14.4†
					Bisexual females	740	12†
					Heterosexual females	90,578	7.2

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken between heterosexual and non-heterosexual groups
[1] Analysis compared combined lesbian/bisexual group with heterosexual women

The majority of the studies find significant differences in favour of higher rates of tobacco use among GLBT. For example Conron et al. (2010) and Pizacani et al. (2009) found that both GLBT male and female groups smoked tobacco at significantly more frequent levels than their heterosexual counterparts. Fergusson et al. (1999) combined males and females, and found that the gay/lesbian/bisexual group had a significantly higher prevalence of nicotine dependence (64.3% to 26.7%).

This finding also applied to youth. For example Bontempo & D'Augelli (2002) found that both GLBT male and female youth smoked tobacco at a higher rate than their heterosexual counterparts. Zhao found that male and female youth who self-identified as GLB, and those who self-identified as heterosexual whilst having either same sex attraction or behaviour, both had a significantly higher prevalence of tobacco use in the past 30 days, compared to heterosexual youth (without same sex attraction or behaviour).

A number of studies reported the highest rates amongst bisexuals (both male and female bisexuals). These studies included Conron et al. (2010), Pizacani et al. (2009), Trocki et al. (2009) and Eisenberg & Wechsler, 2003) (see Table 8).

Four studies used a sample of women only. Valanis et al. (2000) found that the prevalence of current smoking among lesbian and bisexual women was significantly higher than among heterosexual women, and after adjusting for other demographic variables, this group was more than twice as likely to be current smokers. Similarly, Burgard et al. (2005) found that amongst Californian women, 29.8% who had had a same sex partner were a current smoker, compared to 17% of women with male sexual partners only. Gruskin et al. (2001) found that lesbian and bisexual women (the sample came from a health insurance fund) aged between 20 and 49 were significantly more likely to be current smokers (AORs: 3.2-3.4). McCabe et al. (2004) found that bisexual female university students were significantly more likely to have used tobacco in the past month than their heterosexual counterparts (47% to 22%).

Of the 3 studies which did not find a significant difference, Faulkner and Cranston (1998) did not find a significant difference in current tobacco use between those with same sex and opposite sex contact only, and King et al. (2003) did not find a difference between gays or lesbians and heterosexuals in regards to tobacco use. Sandfort et al. (2006) did not find a significantly higher tobacco among GBL in a Dutch population survey[9].

Overall, with 12 out of 15 studies showing a significantly higher prevalence of tobacco use, the weight of international evidence suggests that GLBT populations are more likely to engage in tobacco use. We now turn to Australian studies.

3.1.2 Australian findings: Tobacco

There are a number of studies which report smoking rates amongst GLBT groups in Australia in the absence of any comparison group. For example, in their second national survey of same sex attracted young Australians, Hillier et al. (2005) found that 53% of young GLBT people reported having ever having smoked cigarettes; lower than the prevalence estimate of 56% in the 1998 survey. Of these, 40% indicated that they smoked cigarettes daily, 16% smoked weekly, 15% smoked monthly, and 27% smoked a few times a year. In particular, 18-21 year olds had a higher prevalence of daily smoking than those aged 14-years (25% vs. 17%). Similarly, young women

[9] Case et al. (2004) also found no significant differences in tobacco use between heterosexual and lesbian/bisexual women in the Nurses Health Study (not included in Table 8 as prevalence figures not reported).

were more likely to smoke than young men (59% versus 49%). In the third national survey of this kind, Hillier et al. (2010) found that 23% of same sex attracted young people smoked cigarettes daily. Barbeler (1992) found that amongst a sample of young lesbians residing in and around Sydney, 59% of the sample smoked cigarettes. Specifically, 76% of 14-18 year olds, 57% of 19-21 year olds, and 61% of 22-25 year olds indicated that they were current smokers.

The Australian studies which provide comparison between tobacco use amongst GLBT versus heterosexual groups can be found in Table 9. We located six studies. Before examining the studies in detail, we should point out that much of the Australian literature for tobacco, alcohol and illicit drugs which compares rates between GLBT and non-GLBT samples has not been conducted on single samples. Rather the more common method is to obtain a targeted sample of GLBT and then compare that with an existing general population survey. These studies are regarded as 'proxy' comparison studies, because the sampling frame for the GLBT group is not identical to the non-GLBT group. We have had to rely on such proxy comparison studies because the Australian literature is relatively small, compared with the international literature.

Returning to the data provided in Table 9, the majority of Australian studies find increased rates of tobacco use amongst GLBT groups relative to heterosexual samples. For example, findings from the Western Australia Lesbian and Bisexual Women's Health and Well-Being Survey indicate that the prevalence of smokers in this female cohort is almost double the rate of women in the general population (Hyde, Comfort, McManus, Brown, & Howat, 2009).

The only study to find comparable rates of tobacco use between GLBT and non-GLBT samples was the Australian survey of current regular ecstasy users. Degenhardt (2005) found that 70.6% of heterosexual female ecstasy users versus 73.7% of lesbian/bisexual ecstasy users smoked tobacco in the six months prior to interview. Similarly, 75.6% of heterosexual male ecstasy users versus 79.7% of homosexual/bisexual male ecstasy users smoked tobacco in the past six months. These differences were not statistically significant.

However, the more common finding was higher rates of tobacco use among GLBT (see Table 9). For example, analyses of the 2000 Australian Longitudinal Study of Women's Health indicated that non-heterosexual women were more likely than heterosexual women to have ever smoked or to be current smokers. Specifically, 60.8% of exclusively heterosexual females versus 37% of bisexuals and lesbians reported that they had never smoked; 14.2% of exclusively heterosexual females versus 17.4% of bisexuals and lesbians were former smokers; and 25% of exclusively heterosexual females versus 45.6% of bisexuals and lesbians were current smokers (Hillier, De Visser, Kavanagh, & McNair, 2003). Overall in relation to tobacco use, the Australian research mirrors the international studies, finding substantially higher prevalence amongst GLBT groups.

Table 9: Prevalence of tobacco use among GLBT groups; Australian studies with a non-GLBT comparison group

Author(s)	Year	Survey (year of survey)	Measure(s)	Group	n	Prevalence (%)
Hyde et al.[#]	2009	Western Australian (WA) Lesbian and Bisexual Women's Health and Well-Being Survey (2006-2007)	Current smoker	Lesbian/bisexual females	876	28.1
		WA Health and Wellbeing Surveillance System Study (proxy comparison group)[1]		Females[1]	-	14.7
Degenhardt	2005	Australian Party Drugs Initiative (2003-2004)	Tobacco used in previous six months	Heterosexual females (regular ecstasy users)	252	70.6
				Lesbian/bisexual females (regular ecstasy users)	76	73.7
				Heterosexual males (regular ecstasy users)	455	75.6
				Gay/bisexual males (regular ecstasy users)	69	79.7
Hillier et al.	2003	Australian Longitudinal Study of Women's Health (2000)	Never smoked	Exclusively heterosexual females	8,284	60.8
				Lesbian/bisexual females	755	37.0
			Former smoker	Exclusively heterosexual females	8,284	14.2
				Lesbian/bisexual females	755	17.4[†]
			Current smoker	Exclusively heterosexual females	8,284	25.0
				Lesbian/bisexual females	755	45.6[†]
Murnane et al.[#]	2000	Own (1998)	Ever smoked	Lesbian/bisexual females (20-29 years)	25	80.0
				Females (20-29 years)[1]	-	76.3
		National Drug Strategy Household Survey (1998) (proxy comparison group)[1]		Lesbian/bisexual females (30-39 years)	69	88.4
				Females (30-39 years)[1]	-	77.4
				Lesbian/bisexual females (40-49 years)	86	86.0
				Females (40-49 years)[1]	-	73.9
				Lesbian/bisexual females (50+ years)	42	85.7
				Females (50+ years)[1]	-	57.7
				Gay/bisexual males (20-29 years)	46	76.1
				Males (20-29 years)[1]	-	85.4
				Gay/bisexual males (30-39 years)	88	81.8
				Males (30-39 years)[1]	-	82.5
				Gay/bisexual males (40-49 years)	79	78.2
				Males (40-49 years)[1]	-	84.4
				Gay/bisexual males (50+ years)	55	85.5

Author(s)	Year	Survey (year of survey)	Measure(s)	Group	n	Prevalence (%)
				Males (50+ years)[1]	-	86.6
			Smoked in past month	Lesbian/bisexual females (20-29 years)	25	40.0
				Females (20-29 years)[1]	-	29.0
				Lesbian/bisexual females (30-39 years)	69	44.9
				Females (30-39 years)[1]	-	24.2
				Lesbian/bisexual females (40-49 years)	86	24.4
				Females (40-49 years)[1]	-	24.6
				Lesbian/bisexual females (50+ years)	42	21.4
				Females (50+ years)[1]	-	9.7
				Gay/bisexual males (20-29 years)	46	34.8
				Males (20-29 years)[1]	-	36.6
				Gay/bisexual males (30-39 years)	88	29.5
				Males (30-39 years)[1]	-	31.7
				Gay/bisexual males (40-49 years)	79	31.6
				Males (40-49 years)[1]	-	25.5
				Gay/bisexual males (50+ years)	55	10.9
				Males (50+ years)[1]	-	11.4
Richters et al.[#]	2005	Sydney Women & Sexual Health Survey (2004)	Current smoker	Lesbian/bisexual/ queer females	440	34.3
				Females[1]	-	25.9
		Australian Study of Health and Relationships (proxy comparison group)[1]	Ex-smoker	Lesbian/bisexual/ queer females	440	30.2
				Females[1]	-	24.8
			Never smoked	Lesbian/bisexual/ queer females	440	31.6
				Females[1]	-	49.2
Pitts et al.	2006	Private Lives (2005)	Used tobacco five or more times in previous month	GBTI Males	3,474	38.3
				LBTI Females	2,002	35.6
		National Health Survey (proxy comparison group)[1]	Current smokers	Persons[1]	-	24.0

Notes
[†]statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
[#]no significance testing undertaken
[1]Study used a "proxy" measure of the heterosexual population for comparison

3.2 Alcohol

3.2.1 International literature: Alcohol

There is a large literature on alcohol use in GLBT populations. Thirty-one non-comparison and 32 comparison studies were obtained which examined alcohol *consumption* (not alcohol use disorders) among GLBT groups.

Of those studies which did not include a heterosexual comparison group, those which surveyed gay and bisexual men appeared to show the highest prevalence of alcohol use. Alcohol use among GLBT appears to be highly common, particularly among MSM, with around 90% of this population having used alcohol in the recent past (Amirkhanian et al. , 2009; Craib, Weber, et al. 2000; Stall et al. 2001). Austin and Irwin (2010) found that in a sample of self identified lesbians, problematic drinking was associated strongly with age, and older lesbians drank at problematic levels less often than their younger counterparts. In the sample, 31.1% of women aged 19-29 engaged in heavy episodic drinking multiple times in the past year, compared to 14.3% of those aged 30-49, and 7.7% of those aged 50 and above. There was also a strong relationship between depression and stress and problematic alcohol use, with those factors being significantly related to the likelihood of engagement in this behaviour.

Other studies showing high rates of alcohol consumption among GLBT include Baiocco et al. (2010), Berg (2011), Bostwick et al. (2005), Ferrando et al. (1998) and Ghindia & Kola (1996). However, in the absence of non-GLBT comparison groups, it is difficult to draw firm conclusions.

Comparing GLBT with non-GLBT on alcohol consumption rates

Studies which compare GLBT and non-GLBT alcohol consumption rates are more helpful – there were a number of studies which compared GLBT and non-GLBT on measures of alcohol use (studies that used diagnostic criteria are described later). These studies are provided in Table 10. Synthesising previous research on the prevalence of alcohol use among GLBT populations is complicated by the fact that measures of alcohol use are not standardised across studies. For instance, a number of different studies use the terms "binge drinking" or "heavy drinking", and yet these terms can be defined differently. Burgard et al. (2005) analysed the California Women's Health Survey and found that 15% of women who had had a same sex partner had engaged in binge drinking in the past month, compare to 7.3% of women with male sexual partners only. Prevalence of "heavy" drinking was 3.7% compared to 1.4% in the heterosexual sample. In this study, binge drinking was defined as 1 to 4 binge drinking events in the past month, which involved consuming 5 or more standard drinks in one occasion. Heavy drinking was defined as 5 or more binge drinking episodes in the past month. In Conron et al (2010) binge drinking remained undefined.

Table 10: Prevalence of alcohol consumption among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Survey (year of survey)	Country	Measure	Population	N	Prevalence (%)
Population/random sample							
Conron, Mimiaga & Landers	2010	Massachusetts Behavioural Risk Factor Surveillance Survey (2001-2008)	USA	Binge drinking in past month (not defined)	Gay males	926	31.0
					Bisexual males	194	26.7
					Heterosexual males	25,387	29.5
					Lesbian females	719	17.5
					Bisexual females	432	17.6†
					Heterosexual females	39,701	12.6
Zhao et al.	2010	Quebec Youth Risk Behaviour Survey (2004)	Canada	Alcohol use in past month	GLBT (youth)	1,624	77.6*
					Heterosexual (youth)	58	53.8
Needham & Austin	2010	Add Health (2001-2002)	USA	"Heavy drinking" (5 or more drinks in a row) 1-2 times per week over past 12 months	Lesbian females	72	12.5*
					Bisexual females	152	15.1†
					Heterosexual females	5416	8.1
					Gay males	121	15.0
					Bisexual males	40	15.0
					Heterosexual males	5352	20.7
Reed et al.	2010	Own	USA	Heavy episodic drinking at least once per week in past 3 months (4/5 drinks in one sitting)	Gay/lesbian/bisexual (youth)	42	81.0
					Heterosexual (youth)	946	76.9
McCabe et al.	2009	National Epidemiological Survey on Alcohol and Related Conditions	USA	"Heavy drinking" in past year (4/5 drinks in 2 hour period)	Lesbian females	145	20.1
					Bisexual females	161	25.0†
					Heterosexual females	19,489	8.4
					Gay males	190	18.1
					Bisexual males	81	16.4
					Heterosexual males	14,109	13.7
Burgard et al.	2005	Californian Women's Health Survey	USA	Binge drinking in past month (5 or more drinks in one sitting)	Females with same sex partners	350	15.0*
					Females with male sexual partners only	10,854	7.3
				Heavy drinking in the past month (Binge drinking on 5 or more occasions)	Females with same sex partners	350	3.7
					Females with male sexual partners only	10,854	1.4

Balsam et al.	2004	Own	USA	"Moderate to heavy drinker" (self-assessed)	Gay/lesbian/bisexual Native Americans	25	19.3
					Heterosexual Native Americans	154	19.0
McCabe et al.	2004	Own	USA	Frequent binge drinking in past 2 weeks (not defined)	Bisexual females	49	9.0
					Heterosexual females	2,042	21.0
Eisenberg & Wechsler	2003	College Alcohol Study	USA	Binge drinking in past 2 weeks: 4 (female) or 5 (male) drinks in a row.	Males w/same sex partners	112	50.0
					Males w/both sex partners	83	47.0†
					Males w/opp sex partners	3,896	59.0
					Females w/same sex partners	134	39.0
					Females w/both sex partners	301	53.0
					Females w/opp sex partners	5,775	46.0
Esteban et al.	2003	Own	USA	“Heavy episodic drinking”; 5 or more drinks in one sitting, 3 or more times in past two weeks	Gay/bisexual males	54	7.5
					Heterosexual males	1,446	27.0†
					Lesbian/bisexual females	65	10.0
					Heterosexual females	2,042	20.7
Bontempo & D’Augelli	2002	Massachusetts Youth Risk Behavior Survey/Vermont Youth Risk Behavior Survey	USA	One or more drinks per day	Lesbian/bisexual females (youth)	119	18.6
					Heterosexual females (youth)	4,457	4.8
					Gay/bisexual males (youth)	196	29.4
					Heterosexual males (youth)	4,416	11.3
Robin et al.	2002	Vermont/Massachusetts Youth Risk Behavior Survey	USA (VT)	Binge drinking past 30 days (5 or more drinks on one occasion)	Same sex partners (youth)	249	51.1
					Both sex partners (youth)	336	61.2*

					Opp. Sex partners (youth)	6,873	52.5
			USA (MA)	Binge drinking past 30 days (5 or more drinks on one occasion)	Same sex partners (youth)	106	44.3
					Both sex partners (youth)	122	58.7
					Opp. Sex partners (youth)	3,948	46.9
Woody et al.	2001	Vaccine Preparedness Study	USA	Used in past 6 months	MSM	3,212	88.8
					Single male heterosexual	2,481	79.5
Noell & Ochs	2001	Own	USA	Used in past 3 months	Gay/bisexual males (homeless youth)	?	77.1
					Heterosexual males (homeless youth)	?	79.6
					Lesbian/bisexual females (homeless youth)	?	84.5
					Heterosexual females (homeless youth)	?	72.6
Cochran et al.	2000	National Household Survey of Drug Abuse (1996)	USA	Binge drinking in past month (1 to 4 days of drinking five or more drinks)	Males w/male partners	?	32.9
					Males w/female partners	?	30.6
					Females w/female partners	?	19.4
					Females w/male partners	?	11.7
				Heavy drinking in past month (5 or more days of 5 or more drinks)	Males w/male partners	?	12.1
					Males w/female partners	?	11.5
					Females w/female partners	?	7.0†
					Females w/male partners	?	2.7
Nawyn et al.	2000	Own	USA	"Heavy episodic drinking" in past 12 months (6 or more drinks in 1 day)	Gay/bisexual males	56	48.2*
					Heterosexual males	1,074	33.0

					Lesbian/bisexual females	40	38.5*
					Heterosexual females	1,254	23.7
Valanis et al.[1]	2000	Women's Health Initiative	USA	> 6 drinks per week	Lifetime lesbian females	264	14.0[†]
					Adult lesbian females	309	18.5[†]
					Bisexual females	740	19.1[†]
					Heterosexual females	90,578	12.0
Faulkner & Cranston	1998	Massachusetts Youth Risk Behavior Survey	USA	Used every day in last 30 days	Same sex contact (youth)	105	10.9*
					Other sex students (youth)	1,563	1.2
Garofalo et al.	1998	Youth Risk Behavior Survey	USA	Binge drinking past 30 days (5 or more drinks consumed at one time)	Gay/lesbian/bisexual	104	46.2*
					Heterosexual	4,055	33.0
Bloomfield	1993	Leigh and Trocki	USA	More than 60 drinks in last 30 days	Lesbian/bisexual females	55	11.0
					Heterosexual females	373	10.0
Tori	1989	Own	USA	"Frequent heavy" (5 or more drinks at a sitting once a week or more)	Gay males (illegal immigrants, Mexican)	40	57.5
					Gay males (Mexican)	21	52.4
					Heterosexual males (illegal immigrants)	25	32.0
Stall & Wiley	1988	San Francisco Men's Health Study	USA	Frequent/heavy drinking in past year (5 or more drinks on single occasion more than once a week)	Homosexual men	748	18.7
					Heterosexual men	286	11.3

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
[†] statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
[#] no significance testing undertaken between heterosexual and non-heterosexual groups
[1] Analysis compared combined lesbian/bisexual group with heterosexual women

As can be seen immediately in Table 10 across the 23 studies, the measures of alcohol consumption varied considerably between studies. Despite this variability, it appears that alcohol use is elevated within GLBT populations when compared to non-GLBT. For example, Nawyn (2000) surveyed 2,492 employees at a US university on their drinking patterns. A greater proportion of gay/bisexual men reported heavy episodic drinking (48.2%) compared to their heterosexual counterparts. Similarly, lesbian/bisexual women also reported greater levels of drinking compared to heterosexual women.

This finding also applies to young people. Garofalo et al. (1998) analysed the Massachusetts Youth Risk Behavior Survey, a survey of 4,159 high school students in that state. In the sample, those that identified as GLBT had a significantly higher prevalence of alcohol use in the past 30 days (89.4% compared to 52.8%), and also a significantly higher prevalence of binge drinking in the past 30 days (46.2% to 33%)[10]. Other studies finding significantly higher alcohol consumption amongst young GLBT compared to young non-GLBT included Zhao et al. (2010) and Bontempo & D'Augelli (2002). Reed et al. (2010), however, did not find substantial differences in young people on heavy episodic drinking.

A number of studies have shown that high levels of alcohol consumption may be more of an issue for lesbian and/or bisexual females, than for gay or bisexual males. For instance, Needham and Austin (2010) found in their analysis of the Add Health study that lesbian and bisexual women had significantly higher prevalence of heavy drinking compared to heterosexual women, but there were not differences between GB and heterosexual males[11]. Conron et al. (2010) analysed the 2001-2008 Massachusetts Behavioural Risk Factor Surveillance Surveys, and found only a significant difference between bisexual and heterosexual women in terms of binge drinking (17.6% compared to 12.6%). There were no differences between gay/lesbian and heterosexual males (binge drinking was not specifically defined)[12].

Other studies have shown no significant differences between GLBT and non-GLBT groups in terms of alcohol consumption rates, although these are fewer in number. These studies included Balsam et al. (2004) in a survey of GLBT ("two spirit") and heterosexual Native Americans, Bloomfield (1993) in a survey of lesbian and heterosexual women in San Francisco, and Eisenberg and Wechsler (2003) in a survey of binge drinking among college students.[13] Indeed, two studies find significantly higher rates of alcohol consumption in the heterosexual samples: McCabe et al. (2009) and Esteban et al. (2003). Once again, we note the variability in measures of alcohol consumption across studies; for this reason we need to focus on studies which used objective measures of consumption: alcohol abuse and dependence (as defined by DSM and/or ICD).

Comparing GLBT with non-GLBT on alcohol abuse and dependence

Moving from the literature on alcohol consumption to those studies which measured diagnosis – alcohol abuse or alcohol dependence, and included a non-GLBT comparison group, these are described in Table 11. The search found 13 studies which measured the prevalence of alcohol disorders, and 9 of these found some significant difference between heterosexuals and non-

[10] DeBord (1998) also found that GLBT college students had higher involvement with alcohol use than their heterosexual counterparts (not shown in Table 10 as no prevalence rates reported).
[11] Gruskin et al. (2001) surveyed female members of a health insurance fund and found that lesbian and bisexual women aged between 20 and 34 were almost 5 times more likely to have engaged in heavy drinking (defined as more than 4 drinks per episode or more than 20 drinks per week over the past year) (not shown in Table 10 as no prevalence figures reported).
[12] Similarly, in a Swedish study, Bergmark (1999) found that lesbian women drank greater quantities of alcohol than heterosexual women, but there were no differences between Swedish heterosexual and non-heterosexual men (not shown in Table 10 as prevalence rates not reported).
[13] Similarly, Bernhard (1999) found no differences between lesbian and heterosexual women (not in Table 10 as no prevalence data reported).

heterosexuals. However, when studies divided the sample by gender, few found a difference between heterosexual and non-heterosexual men, whereas differences between heterosexual and non-heterosexual women were more common. Of the ten studies that examined males and females separately, just two found a higher prevalence of alcohol disorders in the gay/bisexual male sample compared to the heterosexual (McCabe, Hughes, Bostwick, West, & Boyd, 2009; Talley, et al., 2011), whilst one actually found a higher rate of alcohol disorder in the *heterosexual* male group (Whitbeck, et al., 2004). In comparison, 6 of those 10 studies found significantly higher rates of alcohol disorders among lesbian and bisexual women when compared to heterosexual women (see Table 11).

Talley et al. (2011), and McCabe et al. (2009) both analysed the NESARC to determine the prevalence of alcohol disorders within the GLBT population, and were the only two studies which showed a higher prevalence of alcohol disorders amongst gay and bisexual men (compared to heterosexual). Talley et al. (2011) analysed the survey according to the three categorisations of sexuality (attraction, behaviour, and identity), and found that for each of these categorisations, both male and female non-heterosexuals were significantly more likely to have been alcohol dependent at some point in their lives than heterosexuals (with the one exception of males with same sex attraction). McCabe et al. (2009) found a higher prevalence of 12 month alcohol dependence amongst lesbians and bisexual women compared to heterosexual women, as well as gay and bisexual men compared to heterosexual men.

Three studies separated males and females, and found a higher prevalence of alcohol disorders among non-heterosexual females only (Cochran & Mays, 2000b; Drabble, Midanik, & Trocki, 2005; Sandfort, et al., 2001). Sandfort et al. (2001) found a higher prevalence of 12 month alcohol dependence and abuse among non-heterosexual women compared to heterosexual women. Cochran and Mays (2000b) analysed data from the US National Household Survey of Drug Abuse. After taking into account other demographic factors such as age and education, females with same sex partners in the previous 12 months were more likely to be alcohol dependent.

Four studies did not find significantly higher rates of alcohol disorders among non-heterosexual men or women (see Table 11). Cochran et al. (2007b) did not find higher rates of 12 month or lifetime disorders among gay/bisexual males or lesbian/bisexual females (sample was Latino and Asian Americans), or higher rates of 12 month alcohol dependence in another study (Cochran, et al., 2003). Fergusson et al. (2005) also found no difference in rates of alcohol dependence in a small New Zealand sample, and Gilman et al. (2001) found no difference in rates of 12 month alcohol abuse or dependence.

Three studies did not separate males and females. Chakraborty et al. (2011) found significantly higher past 6 month alcohol dependence among those identifying as non-heterosexual, however when respondents were categorised according to the gender of their partners, there was no significant difference between these two groups, although the prevalence of alcohol dependence among those with same-sex partners was higher. Cochran & Mays (2009) found a higher rate of past 12 month alcohol dependence among bisexuals only, and not lesbian/gay respondents. Hatzenbuehler et al. (2009), who also analysed the NESARC, found a higher prevalence of 12 month alcohol disorders among GLB respondents.

Overall, the results suggest that alcohol disorders are relatively more problematic for lesbian and bisexual women, than they are for gay and bisexual males. Although alcohol disorders are still prevalent among gay and bisexual males, it may be that the higher rates of alcohol disorders

among heterosexual males (as opposed to heterosexual females) mean that there is little difference between heterosexual and non-heterosexual males on this measure.

Table 11: Prevalence of alcohol use disorders; International studies with a non-GLBT comparison group

Author(s)	Year	Survey (Year of survey)	Location	Measure	Population	N	Prevalence (%)
Population/random sample							
Chakraborty et al.	2011	Adult Psychiatric Morbidity Survey (2007)	England	Alcohol dependence (past six months)	Non-heterosexual	650	10.4†
					Heterosexual	6,811	5.4
					Any same gender partners	667	7.3
					Opposite gender partners	6,794	5.7
Talley et al.	2011	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Alcohol dependence (lifetime)	Males with any same sex attraction	679	18.2
					Males with opposite sex attraction only	12,767	19.3
					Males with same sex behaviour	610	22.6†
					Males with opposite sex behaviour only	12,666	19.2
					Males with sexual minority identity	323	26.5†
					Males with heterosexual identity	13,134	19.1
					Females with any same sex attraction	1,281	16.0†
					Females with opposite sex attraction	15,211	9.7
					Females with same sex behaviour	594	24.2†
					Females with opposite sex behaviour only	15,678	9.6
					Females with sexual minority identity	374	23.7†
					Females with heterosexual identity	16,137	9.8
Cochran & Mays	2009	California Quality of Life Survey (2004-2005)	USA	Alcohol dependence (past 12 months)	Lesbian/gay	150	7.6
					Bisexual	67	12.9†
					Heterosexual	2,004	4.4
Hatzenbuehler	2009	National	USA	Alcohol disorder (past 12 months)	Lesbian/gay/bisexual	577	23.4†

Author(s)	Year	Survey (Year of survey)	Location	Measure	Population	N	Prevalence (%)
et al.		Epidemiological Survey on Alcohol and other Conditions (2004-2005)			Heterosexual	34,076	9.5
McCabe et al.	2009	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Alcohol dependence (past 12 months)	Lesbian female	145	13.3†
					Bisexual female	161	15.6†
					Heterosexual females	19,489	2.5
					Gay male	190	16.8†
					Bisexual male	81	19.5†
					Heterosexual male	14,109	6.1
Cochran et al.	2007	National Latino and Asian American Survey (2002-2003)	USA	Alcohol abuse/dependence (past 12 months)	Gay/bisexual male	84	0.6
					Heterosexual male	1,982	3.0
					Lesbian/bisexual female	161	1.0
					Heterosexual female	2,271	0.9
				Alcohol abuse/dependence (lifetime)	Gay/bisexual male	84	7.3
					Heterosexual male	1,982	14.3
					Lesbian/bisexual female	161	5.2
					Heterosexual female	2,271	3.2
Drabble et al.	2005	National Alcohol Survey (2000)	USA	Alcohol dependence (past 12 months). DSM IV criteria.	Lesbian female	28	11.5†
					Bisexual female	37	16.7†
					Heterosexual female (no same sex partners)	2,080	2.3
					Gay male	47	10.4
					Bisexual male	17	5.6
					Heterosexual male (no same sex partners)	2,141	5.6
Cochran et al.	2003	National Survey of Midlife Development in the United States (1995)	USA	Alcohol dependence (past 12 months)	Gay/bisexual male	37	8.9
					Heterosexual male	1,239	5.6
					Lesbian /bisexual female	37	11.8
					Heterosexual female	1,604	3.4
Gilman et al.	2001	National Comorbidity	USA	Alcohol abuse (past 12 months)	Male w/same sex partner	74	12.9
					Male w/opposite sex partner	2,310	12.0

Author(s)	Year	Survey (Year of survey)	Location	Measure	Population	N	Prevalence (%)
		Survey (1990-1992)			Female w/same sex partner	51	13.3
					Female w/opposite sex partner	2,475	4.6
				Alcohol dependence (past 12 months)	Male w/same sex partner	74	12.1
					Male w/opposite sex partner	2,310	11.6
					Female w/same sex partner	51	15.3
					Female w/opposite sex partner	2,475	4.1
Sandfort et al.	2001	Netherlands Mental Health Survey and Incidence Study (1996)	Netherlands	Alcohol abuse (past 12 months)	Homosexual males	82	6.1
					Heterosexual males	2,796	6.5
					Homosexual females	43	4.7
					Heterosexual females	3,077	1.5
				Alcohol dependence (past 12 months)	Homosexual males	82	11.0
					Heterosexual males	2,796	5.5
					Homosexual females	43	7.0
					Heterosexual females	3,077	1.0
				Alcohol abuse (lifetime)	Homosexual males	82	12.2
					Heterosexual males	2,796	19.2
					Homosexual females	43	7.0†
					Heterosexual females	3,077	3.8
				Alcohol dependence (lifetime)	Homosexual males	82	13.4
					Heterosexual males	2,796	8.4
					Homosexual females	43	11.6†
					Heterosexual females	3,077	1.8
Cochran & Mays	2000	National Household Survey of Drug Abuse (1996)	USA	Alcohol dependence (past 12 months)	Male w/same sex partner	98	10.6
					Male w/opposite sex partner	3,922	7.6
					Female w/same sex partner	96	7.0†
					Female w/opposite sex partner	5,792	2.2
Targeted/convenience sample							
Fergusson et al.	2005	Christchurch Health and Development Study	NZ	Alcohol dependence (whilst aged 21-25)	Gay male	7	0.0
					Heterosexual male	441	7.3
					Lesbian female	20	0
					Heterosexual female	411	3.2
Whitbeck et al.	2004	Own	USA	Alcohol abuse	Gay male (homeless/runaway adolescents)	19	31.6

Author(s)	Year	Survey (Year of survey)	Location	Measure	Population	N	Prevalence (%)
					Heterosexual male (homeless/runaway adolescents)	168	50.0*
					Lesbian female (homeless/runaway adolescents)	44	61.4*
					Heterosexual female (homeless/runaway adolescents)	197	35.5

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken between heterosexual and non-heterosexual groups

It would appear therefore, that elevated rates of consumption, but not necessarily meeting diagnostic criteria for alcohol abuse or dependence, may occur for gay or bisexual men. For lesbian or bisexual women, there is a higher likelihood of meeting criteria for alcohol abuse/dependence and hence alcohol-related problems, relative to heterosexual women. We now turn to the Australian alcohol research.

3.2.2 Australian findings: Alcohol

There have been a number of descriptive studies of alcohol use patterns amongst the GLBT community in Australia. For example, amongst the GLBT community living in metropolitan Sydney and using methamphetamine, Matheson et al. (2010) found that 24% screened positive for alcohol dependence according to the Severity of Dependence Scale. Of those respondents who reported using alcohol in the six months prior to interview, 33% met criteria for dependence (i.e., conditional prevalence of dependence). In terms of gender, 31% of females and 22% of males in the cohort were alcohol dependent. Moreover, 97% of the cohort had ever consumed alcohol, with the median age of first alcohol use being 14 years, and 70% had consumed alcohol in the six months prior to interview, with the median number of days of alcohol use in the six months prior to interview being 48. Finally, after methamphetamine and cannabis, alcohol was the most frequently used drug, with 8% reporting daily alcohol use.

In the first of a series of studies evaluating the sexuality, health and well-being of SSA youth, Hillier et al. (1998) found that approximately half of SSA young people consumed alcohol on a weekly basis and a quarter drank alcohol less than monthly. No gender differences were observed in consumption patterns. In terms of age, 14-18 year olds and 19-21 years olds reported similar rates of daily drinking, however 19-21 years reported higher levels of weekly drinking (56% versus 44%) compared to 14-18 year olds. The prevalence rates associated with infrequent alcohol consumption (i.e., monthly, less than once a month, or never) were higher amongst the younger group compared to the older group.

In a second (cross-sectional) study of this series, Hillier et al. (2005) found that 90% of those SSA young people interviewed reported drinking alcohol in 2004, compared to 95% in the 1998 study. Of those who consumed alcohol, approximately half drank alcohol weekly. Whilst the overall prevalence of alcohol consumption had declined in 2004, similar consumption patterns were observed between young people surveyed in 1998 and 2004. The authors also found that alcohol use was similar amongst 15-18 year olds in the SSA cohort compared to their year 10 and 12 counterparts in the 2002 national secondary schools survey (86% versus 88%, respectively). In the third survey of the series, Hillier et al. (2010) found that 48% of SSA young people consumed alcohol at least weekly. Jorm et al. (2002) also found no significantly higher alcohol misuse scores among homosexual and bisexual respondents compared to heterosexual respondents.

As noted earlier, little can be said about alcohol consumption rates in the absence of a valid comparison group. We now turn to those Australian studies which included a comparison group. There were 8 studies located (plus our own analyses), as detailed in Table 12.

Table 12: Prevalence of alcohol use among GLBT; Australian studies with a non-GLBT comparison group

Author(s)	Year	Survey (year undertaken)	Measure	Population	N	Prevalence (%) (SD)
Population/random sample						
Hughes et al.	2010b	Australian Longitudinal Study of Women's Health (2003)	At-risk drinking	Exclusively heterosexual females	8,083	3.2
				Mainly heterosexual females	568	8.9*
				Bisexual females	100	8.0*
				Lesbian females	99	10.2*
			Binge drinking	Exclusively heterosexual females	8,083	11.6
				Mainly heterosexual females	568	19.6*
				Bisexual females	100	19.6*
				Lesbian females	99	24.5*
Hillier et al.	2003	Australian Longitudinal Study of Women's Health (2000)	Alcohol consumption: No risk	Exclusively heterosexual females	8,419	36.7
				Bisexual/lesbian females	796	23.9
			Alcohol consumption: Low risk (no bingeing)	Exclusively heterosexual females	8,419	31.5
				Bisexual/lesbian females	796	30.6†
			Alcohol consumption: Low risk (with bingeing)	Exclusively heterosexual females	8,419	27.9
				Bisexual/lesbian females	796	38.6†
			Alcohol consumption: Risky	Exclusively heterosexual females	8,419	3.9†
				Bisexual/lesbian females	796	7.0
Roxburgh et al.	In preparation	National Drug Strategy Household Survey (2007)	Lifetime alcohol use	Gay/bisexual males	227	95.7
				Heterosexual males	9,143	95.5
				Lesbian/bisexual females	231	98.6*
				Heterosexual females	11,863	94.7
			Past year alcohol use	Gay/bisexual males	227	89.1
				Heterosexual males	9,143	87.2
				Lesbian/bisexual females	231	87.5
				Heterosexual females	11,863	81.6
Original analyses: Carragher, Matthew-Simmons, Ritter	2012	National Survey of Mental Health and Wellbeing (2007)	Lifetime alcohol use disorder	Homosexual/bisexual	199	30.75 (3.86)
				Heterosexual	8,639	21.99 (0.61)
			Lifetime drinker	Homosexual/bisexual	199	69.52 (3.95)
				Heterosexual	8,630	62.69 (0.83)
Convenience/targeted sample						
Degenhardt	2005	Australian Party Drugs Initiative	Alcohol consumed in previous	Heterosexual females (regular	252	93.3

Author(s)	Year	Survey (year undertaken)	Measure	Population	N	Prevalence (%) (SD)
		(2003-2004)	six months	ecstasy users)		
				Lesbian/bisexual females (regular ecstasy users)	76	89.5
				Heterosexual males (regular ecstasy users)	755	95.6
				Homosexual/bisexual males (regular ecstasy users)	69	97.1
Smith et al.[1]	1999	Own (1997)	No binge drinking occasions in past two weeks	SSA males (youth)	80	53.5
				Non-SSA males (youth)	1,419	52.0
				SSA females (youth)	131	36.4
				Non-SSA females (youth)	1,757	48.9
			One binge drinking occasion in past two weeks	SSA males (youth)	80	9.2
				Non-SSA males (youth)	1,419	19.9
				SSA females (youth)	131	26.8
				Non-SSA females (youth)	1,757	22.8
			Two binge drinking occasions in past two weeks	SSA males (youth)	80	12.3
				Non-SSA males (youth)	1,419	14.4
				SSA females (youth)	131	26.7
				Non-SSA females (youth)	1,757	16.3
			Three+ binge drinking occasions in past two weeks	SSA males (youth)	80	25.0
				Non-SSA males (youth)	1,419	12.7
				SSA females (youth)	131	10.1
				Non-SSA females (youth)	1,757	12.0
Hyde et al.[2]	2009	Western Australian Lesbian and Bisexual Women's Health and Well-Being Survey (2006-2007)	Never drink	Lesbian/bisexual females	917	9.4*
		Western Australia Health and Well-Being Surveillance System (2006) (proxy comparison group)		Females (general population)[2]	-	30.0
			Drink <once/week	Lesbian/bisexual females	917	33.3*

Author(s)	Year	Survey (year undertaken)	Measure	Population	N	Prevalence (%) (SD)
				Females (general population)	-	19.4
			Drink 1-2 days/week	Lesbian/bisexual females	917	23.0
				Females (general population)	-	24.4
			Drink 3-4 days/week	Lesbian/bisexual females	917	16.4*
				Females (general population)	-	12.1
			Drink 5-6 days/week	Lesbian/bisexual females	917	9.3*
				Females (general population)	-	4.4
			Drink every day	Lesbian/bisexual females	917	5.8*
				Females (general population)	-	9.6
Hillier et al.[#2]	2005	Writing Themselves In Again (2003-2004)	Ever consumed alcohol	SSA youth	750	90.0
		National Secondary Schools Survey (2002) (proxy comparison group)		School students (15-16 years and 17-19 years)[2]		86.0
Murnane et al.[2]	2000	Beyond Perceptions (1998)	Consumed alcohol in last month	Lesbian/bisexual females (20-29 years)		80.0
		National Household Survey (1998) (proxy comparison group)		Females (20-29 years)		70.2
				Lesbian/bisexual females (30-39 years)		82.6
				Females (30-39 years)		59.7
				Lesbian/bisexual females (40-49 years)		87.2
				Females (40-49 years)		66.7
				Lesbian/bisexual females (50+ years)		76.2
				Females (50+ years)		47.0
				Gay/bisexual males (20-29 years)		93.5
				Males (20-29 years)		75.8
				Gay/bisexual males (30-39 years)		90.9
				Males (30-39 years)		79.2
				Gay/bisexual males (40-49 years)		92.4

Author(s)	Year	Survey (year undertaken)	Measure	Population	N	Prevalence (%) (SD)
				Males (40-49 years)		61.7
				Gay/bisexual males (50+ years)		89.1
				Males (50+ years)		64.0
			Alcohol consumption:			
			Every day	Lesbian/bisexual females		8.2
				Females		6.9
			4-6 days/week	Lesbian/bisexual females		17.4
				Females		13.6
			1-3 days/week	Lesbian/bisexual females		21.0
				Females		16.5
			1 day/week	Lesbian/bisexual females		19.2
				Females		16.1
			2-3 days/month	Lesbian/bisexual females		12.3
				Females		13.8
			1 day/month	Lesbian/bisexual females		5.9
				Females		9.1
			Less often	Lesbian/bisexual females		10.0
				Females		21.3
			No longer drink	Lesbian/bisexual females		5.9
				Females		2.8
			Every day	Gay/bisexual males		13.6
				Males		9.9
			4-6 days/week	Gay/bisexual males		20.8
				Males		18.6
			1-3 days/week	Gay/bisexual males		24.2
				Males		26.6
			1 day/week	Gay/bisexual males		15.8
				Males		16.9
			2-3 days/month	Gay/bisexual males		14.7
				Males		9.5
			1 day/month	Gay/bisexual males		3.4
				Males		4.1
			Less often	Gay/bisexual males		4.5
				Males		9.8

Author(s)	Year	Survey (year undertaken)	Measure	Population	N	Prevalence (%) (SD)
			No longer drink	Gay/bisexual males		3.0
				Males		4.6

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken between heterosexual and non-heterosexual groups
[1] Significance testing was conducted however reporting was unclear
[2] Study used a "proxy" comparison group, taken from another survey (see Table for proxy studies used)

In analysis of the Australian Longitudinal Study of Women's Health (ALSWH), Hughes et al. (2010b) found a higher prevalence of risky and binge drinking among non-heterosexuals in the past 12 months, with the highest prevalence of these drinking behaviours found among lesbian women. Risky and binge drinking were based on the 2001 National Health and Medical Research Council Guidelines (National Health and Medical Research Council., 2001). Similarly, in the 2000 ALSWH, Hillier et al. (2003) found that non-heterosexual women were significantly more likely than their heterosexual counterparts to report risky levels of alcohol consumption. In this study, 36.7% of exclusively heterosexual females, versus 23.9% of bisexuals and lesbians did not drink at risky levels.

Roxburgh et al. (In preparation) compared self-report lifetime and past-year alcohol use between homosexual and heterosexual men and women in the 2007 National Drug Strategy Household Survey[14]. They found little difference between homosexual and heterosexual males on either lifetime or past year alcohol use (lifetime: 95.7% vs 95.5%; last year 89.1% vs 87.2%) (see Table 12). For women, lifetime alcohol use was significantly more common amongst homosexual women (98.6%) compared to heterosexual women (94.7%) when measured across lifetime (see Table 12). When measured as last year alcohol consumption, the rates were not significantly different (homosexual women 87.5%; heterosexual women 81.6% Roxburgh et al. (In preparation). Separate analyses of homosexual and bisexual respondents were precluded due to small numbers.

In the same way as we used the 2007 National Survey of Mental Health and Well-Being (NSMHWB) to examine differences in mental health disorders between homosexual/bisexual and heterosexual respondents, we were able to conduct those same analyses on alcohol use disorders. This is the only study of diagnostic rates between homosexual and heterosexual Australians. As described earlier (see page 20), the population of the NSMHWB was a random population sample of residents in private dwellings across all states and territories in Australia. Sexual orientation was assessed by asking respondents 'Which of these categories best describes your current sexual orientation?: (i) heterosexual, (ii) homosexual, or (iii) bisexual?'. In total, 97.7% (n = 8,639) respondents identified as heterosexual, 1.5% (n = 135) as homosexual, and 0.7% as bisexual (n = 64); three people did not provide information for this question. Due to low numbers of homosexual and bisexual respondents, the analyses compare homosexual and bisexual individuals (combined) with heterosexual individuals. Of those individuals providing complete information on questions relating to alcohol consumption, 69.52% (S.E. 3.95) homosexual/bisexual adults were classified as a lifetime drinker and 62.69% (0.83) heterosexual adults were identified as lifetime drinkers. When we compared homosexual and bisexual respondents with heterosexual respondents on alcohol use disorders, we found a non-significant difference, despite the higher rates in the homosexual/bisexual group (30.75% compared with 21.99%) (see Table 12).

Of the other studies, Hyde et al. (2009) found that lesbian and bisexual women living in Western Australia consumed significantly more alcohol more frequently and in greater quantities compared to women in general in Western Australia (see Table 12). The authors point out that 25.7% of lesbians and bisexuals exceeded national alcohol guidelines (National Health and Medical Research Council, 2001) by drinking more than four standard drinks on a single occasion, once a week or more. However, only 6.8% of respondents identified themselves as a

[14] The 2007 National Drug Strategy Household Survey (NDSHS) collected data on licit and illicit drug use patterns, attitudes and related behaviours from 23,356 Australians aged 14 years and over. It is the ninth national survey in a series that has been conducted every three years since 1985. The target population was households across all states and territories in Australia. The response rate was 49.3%. While the NDSHS does not collect data on diagnoses, it does collect alcohol consumption data.

heavy drinker, which the authors suggest may indicate that they are unaware or unconcerned about their potentially harmful drinking patterns. Hyde et al. (2009) observed significant age differences amongst lesbian and bisexual women, with younger women aged 18-24 years reporting high levels of alcohol consumption. That being said, harmful drinking was observed across all age groups. In contrast to the above findings, Degenhardt (2005) observed similar rates of alcohol use amongst GLBT individuals and their heterosexual counterparts who were recruited for a survey of regular ecstasy users. It should be noted that the overall rate of alcohol consumption was above 89% in both GLBT and heterosexual groups.

Murnane et al. (2010) examined a range of alcohol consumption indices across GLBT and non-GLBT groups. The authors, for instance found that across all age groups, males and females identifying as GLBT were more likely to report drinking alcohol in the month prior to interview than their counterparts in the general population. Substantial minorities of male and females consumed alcohol contrary to NHMRC guidelines. These proportions were similar in the GLBT and general population samples. In terms of daily consumption guidelines however, Murnane et al. (2000) found that females in the GLBT cohort were more likely than females in the general population to exceed recommended daily guidelines (two standard drinks) on at least one day per week. By contrast, males in the GLBT cohort were less likely than males in the general population to exceed NHMRC recommendations for maximum daily alcohol consumption (four standard drinks) more than once per week.

Finally, based on data from a sample of SSA students in years 10 and 12 in Australian government high schools, Smith et al. (1999) investigated the number of occasions of binge drinking reported in the two weeks prior to interview. Binge drinking was defined as consuming five or more drinks on any one occasion for males, and three or more drinks on any one occasion for females. The authors found that SSA males reported hazardous alcohol consumption twice as frequently as non-SSA males. Whilst a similar picture was apparent for females, the differences were less pronounced.

In summary, Australian research has been largely limited to surveys about alcohol consumption. Rates of alcohol consumption in Australian GLBT populations appear elevated relative to non-GLBT (eg Hillier, et al., 2003; Hyde, et al., 2009; Smith, et al., 1999). Contrary to the international literature, this may not be more pronounced for lesbian and bisexual women (Smith, et al., 1999). In the only analyses of alcohol use disorder (as defined by DSM), the rates were higher in the GLBT sample, but this difference was not statistically significant.

3.3 Illicit drug use

3.3.1 International literature: Illicit drugs

We located a substantial amount of international literature which reported rates of illicit drug use in GLBT populations: 81 studies in total (of which 44 did not have a heterosexual comparison group, and 37 did). There appears to be a large amount of variation in the rates of illicit drug use among GLBT populations. Patterns of drug use appear to vary by geographical location (which country, as well as which kind of area is being surveyed), and by which population is being targeted. For instance, Thiede et al. (2003) surveyed 3492 young MSM aged 15-22, from seven different urban areas in the United States. In this sample, cannabis was the most commonly used drug in the past six months (used by 59% of the sample), followed by cocaine (21%), amphetamines (20.1%), ecstasy (19%), LSD/hallucinogens (19%), and poppers/nitrite inhalers (14%).

Patterns of illicit drug use diverge from the heterosexual population in terms of which drugs are more popular. For instance, certain substances appear to be more popular, particularly among gay/bisexual males. One of the most popular substances in this population is amyl nitrite or "poppers", which is an inhalant drug that can induce a very brief euphoric state. The use of this substance is highly prevalent among gay men. Studies of gay, bisexual, and MSM have shown that up to 70% of this population may have used amyl nitrite at some point. Amyl nitrite is not as popular among lesbian women, however. Pantalone et al. (2010) found that 20.3% of sexual minority men surveyed at community events in New York City in 2007 had used "poppers" during the previous 90 days. Craib et al. (2000) analysed data from two Canadian surveys of gay men, with nitrite inhalants being the most commonly used substance in the past 12 months (43% in one of the surveys analysed). 30% had used cocaine, 21% LSD, 66% cannabis, and up to 17% methamphetamines.

Apart from increased frequency of drug use, GLBT groups may be at greater risk of risky use practices. Ochoa et al. (2001) surveyed IDU in San Francisco and found that a gay or bisexual identity was associated with greater odds of overdose, when compared to heterosexuals. Injecting behaviour has also been studied. Goodenow et al. (2002) examined three waves of the MYRBS, looking at those males who had indicated some sexual contact with another person. 4.2% of those males which had partners of the opposite sex only (heterosexuals) had ever injected illicit drugs, compared to 5.6% of those with partners of the same sex only, and 39.2% of those with partners of both sexes (bisexual males). The difference between bisexual males and heterosexuals males remained significant after accounting for other demographic factors (AOR: 3.1).

We located multiple studies which surveyed the GLBT community in particular settings. For example there were 21 non-comparison studies which measured methamphetamine use in GLBT populations. The prevalence of methamphetamine use ranged widely in these studies, from just 1% of a sample of gay and bisexual Canadian men (used in past 21 months) (Craib, et al., 2000), to 31% of gay "circuit party" attendees in New York City (who were using methamphetamine that day) (Lee, Galanter, Dermatis, & McDowell, 2003). The recorded prevalence of methamphetamine use, like other illicit drugs within these populations, is likely to be heavily dependent on how the sample of respondents is drawn, and from where. Samples of urban populations taken at GLBT social events are likely to provide elevated estimates of drug use prevalence, and are also not likely to be representative of the GLBT community as a whole. On the other hand Bonell et al. (2010) surveyed 6155 gay and bisexual men across the UK, and found that 4.7% had used methamphetamines in the past 12 months – a figure comparable with general population rates.

Among the general population, drug use is concentrated in specific age groups; generally those aged in their 20s and 30s. Analysis of two surveys of GB men aged between 25 and 29 in San Francisco (Crosby, Stall, Paul, & Barrett, 1998) – one conducted in 1984 and a subsequent survey in 1992 - showed high past year prevalence of a range of illicit drugs, including cannabis (85.3% in 1984), "poppers" (62.2%) and cocaine (71.1%). The prevalence of these drugs had all declined in the later 1992 survey (Crosby, et al., 1998).

Studies which have looked at small specific samples of non-heterosexuals may not be representative of the GLBT population in general, and may find particularly high rates of drug use. This is why it is essential to examine in greater detail studies which have drawn samples from the wider population samples, and that have included a non-GLBT comparison group. We turn to this next.

Comparing GLBT with non-GLBT on illicit drug use rates

Table 13 summarises those international studies of illicit drug use rates, across multiple drugs, (excluding cannabis, which is discussed further below), where the study included a non-GLBT comparison group. As can be seen in Table 13, almost every study comes from the USA (with one exception: a UK convenience sample study). Rates of any illicit drug use are substantially higher in every study with the exception of Goodenow et al. (2002) and Reed et al. (2010).

King et al. (2003) conducted a survey of heterosexual and GLBT individuals in England and Wales. They found that significantly more gay men (52%) than heterosexual men (45%) reported recreational drug use in the past month. This pattern was also repeated for women; more lesbian women (44%) reported recreational drug use compared to heterosexual women (33%). Other studies with significantly higher illicit drug use rates for GLBT groups include Fendrich et al. (2003), Faulkner and Cranston (1998), and Robin et al. (1992).

Examining methamphetamine, Table 13 shows comparatively higher rates of methamphetamine use in GLBT samples compared with heterosexual samples (eg Woody et al. 2001; Parsons et al. 2006). Notably, Corliss et al. (2010) find the highest methamphetamine rates for bisexual males and females.

The prevalence of heroin use among GLBT populations may not be as large a concern as some of the other drugs measured in these studies (methamphetamine for instance)[15]. Table 13 shows that in the two studies which included a heterosexual comparison group, only Corliss et al. (2010) showed a significant difference between the GLBT and heterosexual populations. Bisexual (but not lesbian) females were more likely to have used heroin in the past 12 months compared to heterosexual females, and gay (but not bisexual) males were more likely to have used heroin than heterosexual males. However, the prevalence of heroin use is still much lower in this study when compared to the use of other drugs.

There seems some evidence to suggest that cocaine is used more frequently in GLBT samples (see Table 13), with studies from Corliss (2010), Faulkner (1998), Garofalo (1998), Woody et al. (2001) and Robin et al. (2002) showing elevated rates in GLBT compared with heterosexual groups. On the other hand, Noell and Ochs (2001) did not report elevated rates of cocaine use.

Studies of young people and university students have found elevated rates of drug use amongst GLBT youth. Garofalo et al. (1998) analysed the Massachusetts Youth Risk Behavior Survey (MYRBS), a survey of 4,159 high school students in that state (see Table 13). In the sample, those young people that identified as GLBT had a significantly higher prevalence of cocaine use (25.3% to 2.7%) in the past 30 days. Bontempo and D'Augelli (2002) (see Table 14 – cannabis) also analysed data from the Massachusetts and Vermont Youth Risk Behavior Surveys and found that GLBT males and female youths were more frequent users of both cannabis and cocaine. 2.4% of heterosexual females in the sample used cannabis or cocaine at least once a day during the past month, compared to 18.3% of lesbian or bisexual females. Similarly, 6.7% of heterosexual young males used at this level, compared to 26.3% of gay or bisexual youths, a significantly more frequent level than their heterosexual counterparts.

This finding is supported by the study by Boyd et al. (2003) who surveyed over three thousand University students in Michigan on their ecstasy use. 10% of those with a heterosexual identity

[15] Sixteen non-comparison studies measured the prevalence of heroin use. The highest recorded prevalence of heroin use in these studies was found by Ramires-Vallez et al. (2008), who found that 5.9% of a Latino GLBT sample had used heroin in the past 6 months. The other 15 studies recorded a prevalence of heroin use below this, and a majority found that less than 3% of the sample had used heroin.

had used ecstasy in their lifetimes, compared to 25% of those with a GLBT identity (statistically significant). After taking into account a range of demographic factors, GLBT students were almost 3 times more likely to have used ecstasy in the past 12 months than their heterosexual counterparts.

Corliss et al. (2010) examined the prevalence of past year illicit drug use in the Growing Up Today Study, a longitudinal study of youth (see Table 13). The ages of the sample analysed ranged between 12 and 23. The analysis compared the prevalence of cannabis, heroin, amphetamines, cocaine, ecstasy, and LSD/mushrooms, as well as the misuse of prescription drugs. Within the sample, cannabis was the most frequently used illicit drug by young people. 18.6% of heterosexual females and 20.9% of heterosexual males had used cannabis in the past 12 months. This compared to 59.9% of bisexual and 49.6% of lesbian females; and 38.5% of bisexual/32.1% of gay males having used in the past year. Elevated prevalence among young GLBT respondents were seen across all drug types, and in most cases, differences remained significant after accounting for age and race.[16]

We located studies which did not report prevalence (hence not shown in Table 13). Mackesy-Amiti et al. (2009) found no differences between samples of MSM and other men in Chicago, in terms of problematic use of alcohol, cannabis or cocaine. Whitbeck's et al. (2004) survey of homeless and runaway adolescents found that whilst there were no significant differences between gay and heterosexual males in relation to drug abuse, lesbian females showed a higher prevalence of drug abuse than heterosexual females. This suggests that elevated illicit drug use amongst GLBT may be equivocal. Russell et al. (2002) found an association between same sex attraction and drug use.

[16] Marshal et al. (2009) studied trajectories of drug use among GLBT and non-GLBT adolescents. The study found that self-identified GLBT youth reported higher initial rates of substance use, and on average their substance use increased over time more rapidly than did substance use by heterosexual youth (not shown in Table 12 as no prevalence reported).

Table 13: Prevalence of illicit drug use (non-cannabis) among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Country	Measure	Group	N	Any illicit drug use (%)	Meth/amphetamines (%)	Heroin/opioids (%)	Ecstasy (%)	Cocaine/Crack (%)	Amyl/Poppers/Inhalants (%)	GHB (%)	Hallucinogens (%)
Conron et al.	2010	USA	Used in past 30 days	Gay/lesbian	1,645	16.5†	-	-	-	-	-	-	-
				Bisexual	626	29.8†	-	-	-	-	-	-	-
				Hetero	65,088	7.7	-	-	-	-	-	-	-
Corliss et al.	2010	USA	Used in past 12 months	Lesbian females	?	-	8.3†	0.0	8.7†	6.9†	-	-	14.3†
				Bisexual females	?	-	14.7†	0.8†	14.8†	9.8†	-	-	19.3†
				Heterosexual females	?	-	1.3	0.1	1.8	1.8	-	-	2.3
				Gay males	?	-	4.5†	2.6†	7.4†	6.8†	-	-	8.2†
				Bisexual males	?	-	6.2†	1.3	12.3†	3.2	-	-	8.0
				Heterosexual males	?	-	1.5	0.2	1.7	2.4	-	-	4.2
Needham & Austin	2010	USA	"Hard" drug use past 30 days	Lesbian females	72	20.8*	-	-	-	-	-	-	-
				Bisexual females	152	19.7*	-	-	-	-	-	-	-
				Heterosexual females	5,416	5.0	-	-	-	-	-	-	-
				Gay males	121	11.7	-	-	-	-	-	-	-
				Bisexual males	40	15.0	-	-	-	-	-	-	-
				Heterosexual males	5,352	8.9	-	-	-	-	-	-	-
Reed et al.	2010	USA	Used in past 30 days	Gay/lesbian/bisexual	42	33.5	-	-	-	-	-	-	-
				Heterosexual	946	20.5	-	-	-	-	-	-	-
Parsons et al.	2006	USA	Lifetime use	Lesbian/bisexual females (nightclub attendees)	588	76.0*	17.0*	-	49.2*	47.3*	-	9.4	33.0* (LSD)
				Heterosexual females (nightclub attendees)	516	69.1	9.7	-	39.7	37.2	-	7.3	22.8 (LSD)
Cochran et al.	2004	USA	Used in past month	Males with same sex partners	98	-	-	0.8	-	3.9†	0.0	-	1.6
				Males with opposite sex partners only	3,922	-	-	0.1	-	1.2	0.6	-	0.7
				Females with same partners	33	-	-	0.0	-	1.7	0.0	-	1.4

Author(s)	Year	Country	Measure	Group	N	Any illicit drug use (%)	Meth/amphetamines (%)	Heroin/opioids (%)	Ecstasy (%)	Cocaine/Crack (%)	Amyl/Poppers /Inhalants (%)	GHB (%)	Hallucinogens (%)
				Females with male partners only	5,792	-	-	0.0	-	0.6	0.1	-	0.3
McCabe et al.	2004	USA	Used in past 12 months	Bisexual females	49	-	-	-	21.0*	-	-	-	-
				Heterosexual females	2,042	-	-	-	6.0	-	-	-	-
Fendrich et al.	2003	USA	Lifetime "club drug" use	Gay/bisexual	?	39.0*	-	-	-	-	-	-	-
				Heterosexual	?	18.0	-	-	-	-	-	-	-
Goodenow et al.	2002	USA	Lifetime injection drug use	Males same sex partners	?	5.6	-	-	-	-	-	-	-
				Males both sex partners	?	39.2†	-	-	-	-	-	-	-
				Males opposite sex partners only	?	4.2	-	-	-	-	-	-	-
Robin et al.	2002	USA (VT)	Used in past 30 days	Same sex partners	249	-	-	-	-	23.2	-	-	-
				Both sex partners	336	-	-	-	-	47.2*	-	-	-
				Opposite sex partners	6,873	-	-	-	-	14.3	-	-	-
		USA (MA)	Used in past 30 days	Same sex partners	106	-	-	-	-	17.7	-	-	-
				Both sex partners	122	-	-	-	-	44.1*	-	-	-
				Opposite sex partners	3,948	-	-	-	-	11.6	-	-	-
Boyd et al.	2003	USA	Lifetime use	Gay/lesbian/bisexual	3,454	-	-	-	25.0†	-	-	-	-
				Heterosexual	117	-	-	-	10.0	-	-	-	-
Woody et al.	2001	USA	Used in past 6 months "Methamphetamines" inc cocaine, "hallucinogens" inc MDMA and Ketamine	MSM	3,212	-	20.7*	-	-	14.4*	29.1*	-	14.3*
				Heterosexual male (single)	2,481	-	4.6	-	-	3.9	1.4	-	2.3
Faulkner & Cranston	1998	USA	Used at least once in last 30 days	Same sex contact	105	29.2*	-	-	-	19.2*	-	-	-
				Opposite sex contact	1,563	18.4	-	-	-	3.2			
			Used 10 times or more in past 30 days	Same sex contact	105	-	-	-	-	13.3*	-	-	-
				Opposite sex contact	1,563	-	-	-	-	0.7	-	-	-
			Used 20 times or	Same sex contact	105	17.8*	-	-	-	-	-	-	-

Author(s)	Year	Country	Measure	Group	N	Any illicit drug use (%)	Meth/amphetamines (%)	Heroin/opioids (%)	Ecstasy (%)	Cocaine/Crack (%)	Amyl/Poppers/Inhalants (%)	GHB (%)	Hallucinogens (%)
			more in past 30 days	Opposite sex contact	1,563	3.5	-	-	-	-	-	-	-
			Injection drug use at least once	Same sex contact	105	20.8*	-	-	-	-	-	-	-
				Opposite sex contact	1,563	3.1	-	-	-	-	-	-	-
Garofalo et al.	1998	USA	Used in past 30 days	Gay/lesbian/bisexual	104	-	-	-	-	25.3*	-	-	-
				Heterosexual	4,055	-	-	-	-	2.7	-	-	-
			Lifetime use	Gay/lesbian/bisexual	104	-	-	-	-	-	47.6*	-	-
				Heterosexual	4,055	-	-	-	-	-	18.5	-	-
Convenience/targeted sample													
Balsam et al.	2004	USA	Lifetime drug use (any drug other than cannabis)	Gay/lesbian/bisexual Native Americans	25	78.3	-	-	-	-	-	-	-
				Heterosexual Native Americans	154	56	-	-	-	-	-	-	-
King et al.	2003	UK	Recreational drug use past 30 days	Lesbian females	422	44.0*	-	-	-	-	-	-	-
				Heterosexual females	583	33.0	-	-	-	-	-	-	-
				Gay males	626	52.0*	-	-	-	-	-	-	-
				Heterosexual males	498	45.0	-	-	-	-	-	-	-
Noell & Ochs	2001	USA	Used in last 3 months	Gay/bisexual males (homeless youth)	?	-	42.9*	-	-	8.6	11.4	-	57.1
				Heterosexual males (homeless youth)	?	-	35.9	-	-	11.7	12.6	-	41.7
				Lesbian/bisexual females (homeless youth)	?	-	57.6*	-	-	11.9	17.9	-	44
				Heterosexual females (homeless youth)	?	-	33.7	-	-	10.5	11.6	-	30.5

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
# no significance testing undertaken between heterosexual and non-heterosexual groups

Cannabis is the most frequently used illicit drug in the general population. Twenty-nine non-comparison studies measured cannabis use in some way. The highest recorded prevalence of cannabis found in these studies was by Ostrow (2000), who found that 70% of a sample of gay and bisexual men in Chicago had used cannabis in the past six months (however this was from the 1984 wave of the survey analysed in this study). Similarly, Greenwood et al. (2001) found in a sample of gay and bisexual men that 68.7% had used cannabis in the past 12 months.

As above, more useful are those studies which include a heterosexual comparison group. Those studies of cannabis use which compare GLBT and non-GLBT populations are described in Table 14.

Table 14: Prevalence of cannabis use among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Survey	Country	Measure	Population	N	Prevalence (%)
Zhao et al.	2010	Quebec Youth Risk Behavior Survey	Canada	Past 30 days cannabis use	GLBT (youth)	1,624	50.0*
					Heterosexual (youth)	58	26.5
Corliss et al.	2010	Growing Up Today Study	USA	Past year cannabis use	Lesbian females	?	49.6†
					Bisexual females	?	59.9†
					Heterosexual females	?	18.6
					Gay males	?	32.1†
					Bisexual males	?	38.5†
					Heterosexual males	?	20.9
Needham & Austin	2010	Add Health (2001-02)	USA	Past 30 days cannabis use	Lesbian females	72	47.2*
					Bisexual females	152	42.7*
					Heterosexual females	5416	18.1
					Gay males	121	26.7
					Bisexual males	40	40
					Heterosexual males	5352	28.3
McCabe et al.	2009	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Past year cannabis use	Lesbian females	145	16.7*
					Bisexual females	161	22.2*
					Heterosexual females	19,489	2.6
					Gay males	190	25.2*
					Bisexual males	81	13.2
					Heterosexual males	14,109	6.2
				Cannabis dependence (past 12 months)	Lesbian females	145	2.8
					Bisexual females	161	1.4
					Heterosexual females	19,489	0.2
					Gay males	190	0.6
					Bisexual males	81	1.1
					Heterosexual males	14,109	0.5
Trocki et al.	2009	National Alcohol Survey (2000)	USA	Past year cannabis use	Lesbian females	36	21.1†
					Bisexual females	50	37.8†
					Heterosexual females	3,723	5.0

Author(s)	Year	Survey	Country	Measure	Population	N	Prevalence (%)
					Gay males	57	29.3†
					Bisexual males	27	8.3
					Heterosexual males	3,201	8.8
McCabe et al.	2004	Own	USA	Past year cannabis use	Bisexual females	49	66.0*
					Heterosexual females	2,042	32.0
Cochran et al.	2004	National Household Survey of Drug Abuse	USA	Past 30 days cannabis use	Males w/same sex partners	98	13.9
					Males w/opp. sex partners only	3,922	8.4
					Females w/same sex partners	33	14.0*
					Females w/opp. sex partners only	5,792	3.4
Eisenberg & Wechsler	2003	College Alcohol Study	USA	Past 30 days cannabis use	Males w/same sex partners	112	19.0
					Males w/both sex partners	83	28.0
					Males w/opp. sex partners	3,896	23.0
					Females w/same sex partners	134	11.0
					Females w/both sex partners	301	35.0†
					Females w/opp. sex partners	5,775	16.0
Bontempo & D'Augelli	2002	Massachusetts/ Vermont Youth Risk Behavior Surveys	USA	Past 30 days cannabis/cocaine use	Lesbian/bisexual females	119	18.3*
					Heterosexual females	4,457	2.4
					Gay/bisexual males	196	26.3*
					Heterosexual males	4,416	6.7
Robin et al.	2002	Massachusetts/ Vermont Youth Risk Behavior Surveys	USA (VT)	Past 30 days cannabis use	Opp. sex partners	6873	49.7
					Same sex partners	249	52.6
					Both sex partners	336	69.1*
			USA (MA)	Past 30 days cannabis use	Opp. Sex partners	3948	46.4
					Same sex partners	106	52.3
					Both sex partners	122	67.8*
Woody et al[1].	2001	Vaccine Preparedness Study[1]	USA	Used cannabis in past 6 months	MSM	3,212	49.4*
					Heterosexual males (single)	2,481	15.3
Faulkner & Cranston	1998	Massachusetts Youth Risk Behavior Surveys	USA	Past 30 days cannabis use	Same sex contact	105	30.1
					Other sex contact	1,563	30.7
				Used cannabis 40 or more times in past 30 days	Same sex contact	105	12.4*
					Other sex contact	1,563	3.3
Garofalo et al.	1998	Massachusetts Youth Risk	USA	Past 30 days cannabis use	Gay/lesbian/bisexual (youth)	104	53.7†
					Heterosexual (youth)	4,055	31.4

Author(s)	Year	Survey	Country	Measure	Population	N	Prevalence (%)
		Behavior Surveys					
Convenience/targeted sample							
Balsam et al.	2004	Own	USA	Lifetime cannabis use	Gay/lesbian/bisexual Native Americans	25	95.8
					Heterosexual Native Americans	154	84.2
Noell & Ochs	2001	Own	USA	Past 3 months cannabis use	Gay/bisexual males (homeless youth)	?	54.3*
					Heterosexual males (homeless youth)	?	80.6
					Lesbian/bisexual females (homeless youth)	?	75.0
					Heterosexual females (homeless youth)	?	65.3

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
[1] Compares own data with 1995 National Household Survey on Drug Abuse for heterosexual sample

As can be seen (Table 14), there were 15 studies with 14 of these finding significantly higher rates of cannabis use (variously defined and measured) among GLBT relative to non-GLBT (Bontempo & D'Augelli, 2002; Cochran, Ackerman, Mays, & Ross, 2004; Corliss, et al., 2010; Eisenberg & Wechsler, 2003; Faulkner & Cranston, 1998; Garofalo, et al., 1998; McCabe, et al., 2009; McCabe, et al., 2004; Needham & Austin, 2010; Noell & Ochs, 2001; Robin et al, 2002; Trocki, Drabble, & Midanik, 2009; Woody et al., 2001; Zhao et al., 2010).

For example, analysis undertaken on the National Alcohol Survey (Trocki et al., 2009) found that non-heterosexual women and those with same sex partners were more likely to be current cannabis users (AOR between 3 and 5) compared to heterosexual women. In the same study, gay men were 4 times more likely than exclusively heterosexual men to be current cannabis users, after controlling for other demographic factors.

A number of studies have indicated that bisexual women are those with the highest rates of cannabis use. Rates of past year cannabis use were highest among bisexual women; 37.8% compared to 21.1% in lesbian sample, and 5% in heterosexual respondents (Trocki et al., 2009). Needham and Austin (2010) also found in their analysis of the Add Health study that lesbian and bisexual women had significantly higher prevalence of cannabis and other illicit drug use compared to heterosexual women, but there were not differences between GB and heterosexual males.

Comparing GLBT and non-GLBT on diagnostic criteria for drug abuse/dependence

We have suggested that the interest in drug use per se may be misplaced, and a more fulsome picture can be obtained when we examine the prevalence of diagnosed drug related disorders. Whilst the notion of diagnosis is often contested, this measure does indicate level of problematic drug use, use over and above "recreational" use.

Studies which have examined the extent to which GLBT compared to non-GLBT people meet diagnostic criteria for drug abuse/dependence are provided in Table 15. We suggest this is the 'best' form of evidence in relation to differences between GLBT and non-GLBT in relation to illicit drug use.

Table 15: Prevalence of drug disorders (diagnoses) among GLBT; International studies with a non-GLBT comparison group

Author(s)	Year	Survey (Year of survey)	Country	Measure	Population	N	Prevalence (%)
Bolton & Sareen	2011	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Any SUD (lifetime)	Gay male	190	65.0†
					Bisexual male	81	55.8
					Heterosexual male	14,109	50.0
					Lesbian female	145	60.8†
					Bisexual female	161	61.9†
					Heterosexual female	19,489	24.3
Chakraborty et al.	2011	Adult Psychiatric Morbidity Survey (2007)	England	Drug dependence (past 12 months)	Non-heterosexual	650	6.1†
					Heterosexual	6,811	3.1
					Any same gender partners	667	4.5
					Opposite gender partners	6,794	3.2
Talley et al.	2011	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Drug dependence (without alcohol dependence, lifetime)	Males with any same sex attraction	679	2.4†
					Males with opposite sex attraction only	12,767	1.2
					Males with same sex behaviour	610	3.1†
					Males with opposite sex behaviour only	12,666	1.1
					Males with sexual minority identity	323	3.4†
					Males with heterosexual identity	13,134	1.2
					Females with any same sex attraction	1,281	1.7†
					Females with opposite sex attraction	15,211	1.1
					Females with same sex behaviour	594	3.4†
					Females with opposite sex behaviour only	15,678	1.0
					Females with sexual minority identity	374	3.8†
					Females with heterosexual identity	16,137	1.1

Author(s)	Year	Survey (Year of survey)	Country	Measure	Population	N	Prevalence (%)
Hughes et al.	2010	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Any SUD (past 12 months)	Lesbian females	-	25.8*
					Bisexual females		24.3*
					Heterosexual females		5.8
					Gay males	-	31.4*
					Bisexual males	-	27.6
					Heterosexual males	-	15.6
McCabe et al.	2010	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Any SUD (past 12 months)	Lesbian females	-	25.8*
					Bisexual females	-	24.3*
					Heterosexual females	-	5.8 *
					Gay males	-	31.4*
					Bisexual males	-	27.6*
					Heterosexual males	-	15.6
Cochran & Mays	2009	California Quality of Life Survey (2004-2005)	USA	Drug dependence (past 12 months)	Lesbian/gay	150	2.9
					Bisexual	67	6.7
					Exclusively heterosexual	2,004	2.3
Hatzenbuehler et al.	2009	National Epidemiological Survey on Alcohol and other Conditions (2004-2005)	USA	Drug use disorder (past 12 months)	Homosexual	577	11.7†
					Heterosexual	34,076	2.3
Cochran et al.	2007	National Latino and Asian American Survey (2002-2003)	USA	Drug abuse/dependence (past 12 months)	Gay/bisexual males	84	0.5
					Heterosexual males	1,982	1.3
					Lesbian/bisexual females	161	2.9†
					Heterosexual females	2,271	0.2
Cochran et al.	2003	National Survey of Midlife Development in the United States (1995)	USA	Drug dependence (past 12 months)	Gay/bisexual males	37	9.2
					Heterosexual males	1,239	2.7
					Lesbian/bisexual females	37	6.5
					Heterosexual females	1,604	1.5
Gilman et al.	2001	National Comorbidity Survey (1990-1992)	USA	Drug abuse (past 12 months)	Male any same sex partner	74	10.7†
					Male opposite sex partner only	2,310	4.4
					Female any same sex partner	51	1.2
					Female opposite sex partner only	2,475	1.8
				Drug dependence (past 12 months)	Male any same sex partner	74	9.2†

Author(s)	Year	Survey (Year of survey)	Country	Measure	Population	N	Prevalence (%)
					Male opposite sex partner only	2,310	4.0
					Female any same sex partner	51	4.1
					Female opposite sex partner only	2,475	2.1
Sandfort et al.	2001	Netherlands Mental Health Survey and Incidence Study (1996)	Netherlands	Drug abuse (past 12 months)	Homosexual males	82	1.2
					Heterosexual males	2,796	0.6
					Homosexual females	43	0.0
					Heterosexual females	3,077	0.3
				Drug dependence (past 12 months)	Homosexual males	82	0.0
					Heterosexual males	2,796	0.9
					Homosexual females	43	2.3
					Heterosexual females	3,077	0.4
				Drug abuse (lifetime)	Homosexual males	82	4.9
					Heterosexual males	2,796	2.0
					Homosexual females	43	2.3
					Heterosexual females	3,077	1.1
				Drug dependence (lifetime)	Homosexual males	82	4.9
					Heterosexual males	2,796	1.8
					Homosexual females	43	9.3*
					Heterosexual females	3,077	1.2
Cochran & Mays	2000b	National Household Survey of Drug Abuse (1996)	USA	Drug dependence (past 12 months)	Males w/ same gender partner	98	5.7
					Males w/ opposite gender partner	3,922	2.8
					Females w/ same gender partner	96	5.0†
					Females w/ opposite gender partner	5,792	1.3
Convenience/targeted sample							
Fergusson et al.	2005	Christchurch Health and Development Study	New Zealand	Drug dependence (whilst aged 21-25)	Predominantly homosexual males	7	42.9*
					Exclusively heterosexual males	441	11.1
					Predominantly homosexual females	20	10.0*
					Exclusively heterosexual females	411	2.4
Whitbeck et al.	2004	Own	USA	Drug abuse	Gay male (homeless/runaway adolescents)	19	47.4

					Heterosexual male (homeless/runaway adolescents)	168	47.0
					Lesbian female (homeless/runaway adolescents)	44	47.7*
					Heterosexual female (homeless/runaway adolescents)	197	32.5
Fergusson, Horwood & Beautrais	1999	Christchurch Health and Development Study	New Zealand	Drug abuse/dependence (including alcohol)	Gay/lesbian/bisexual	28	60.7
					Heterosexual	979	44.3

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
† statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)

As can be seen in Table 15, of the fifteen studies we located which compared drug abuse/dependence diagnosis between GLBT and non-GLBT samples, we find that three studies report non-significant differences (Cochran & Mays, 2009; Cochran et al., 2003; and Fergusson et al. 1999). The remaining twelve studies all find significantly higher rates of drug abuse/dependence diagnoses in GLBT samples compared with heterosexual samples (notwithstanding the differences in the measurement of sexual orientation, see Table 15). For example, Hughes et al. (2010a) analysed NESARC data to examine the prevalence and correlates of substance use disorders among GLBT individuals in the US population. Lesbian (25.8%) and bisexual women (24.3%) had a significantly higher prevalence of past year substance use disorders compared to heterosexual women (5.8%). Gay men (31.4%) also had a significantly higher prevalence of substance use disorder compared to heterosexual men (15.6%).

Overall it appears that the differences were smaller for men[17]. For example Bolton & Sareen (2011) found that 50% of heterosexual men had an SUD, compared to 65% of gay men and 55.8% of bisexual men. For women, the differences were much greater in magnitude. 24.3% of heterosexual women had an SUD, compared to 60.8% of lesbian women and 61.9% of bisexual women (Bolton & Sareen, 2011). Cochran and Mays (2000b) found in a population sample that women with same sex partners were more likely to satisfy criteria for drug and alcohol dependence. There were no differences in relation to men. These results suggest that problematic drug use is a particularly important issue for non-heterosexual women.

Bisexual women appear the most likely to meet diagnostic criteria for drug abuse/dependence – as evidenced by the studies from Bolton & Sareen (2011) and Cochran & Mays (2009) (see Table 15).

3.3.2 Australian findings: Illicit drugs

The search found eight Australian studies which had reported the prevalence of illicit drug use in GLBT populations. Based on a sample of same-sex attracted young men and women, Hillier et al. (1998) found that 7% of the cohort used cannabis daily, 14% used cannabis weekly, 12% used cannabis monthly, 30% used cannabis less than monthly, and 37% had never used cannabis. A higher number of women than men reported smoking cannabis daily, weekly, monthly, and more infrequent use. In terms of "party" drugs, 30% of respondents reported using party drugs (e.g., ecstasy, speed, LSD), with 15% stating they used party drugs only a few times in the year. Hillier et al. (1998) note that whilst no gender differences were observed in patterns of use, differences in terms of age were apparent. Specifically, although a greater number of 14-18 year olds compared to 19-21 year olds reported that they never used party drugs (74% vs. 65%), those 14-18 year olds who *did* use party drugs, did so on a more regular weekly basis.

In a further study of this kind, Hillier et al. (2005) found that in 2004, 44% of those same-sex attracted young people surveyed reported smoking cannabis, marking a decrease from 63% in 1998. Of these, 51% used cannabis a few times in the year. More 18-21 year olds than 14-17 year olds reported using cannabis (49% vs. 38%). With regard to party drugs, 25% of young people in 2004 reported using party drugs, compared to 30% in 1998. Of these, 50% reported using party drugs a few times per year. More 18-21 year olds reported using party drugs than 14-17 year olds (32% vs. 15%). Similar to 1998, no gender differences were observed in the use of party drugs. In terms of heroin, 2% reported having used heroin in 2004, compared to 6% in 1998, with the majority using heroin a few times of the year. No gender or age differences in patterns of use were observed. In the context of injecting drug use, 4% of the sample in 2004 reported that they

[17] This is further supported by studies without comparison groups, such as Warner et al. (2004) who found that lesbian women had the highest rates of past month illicit drug use (56%), compared to bisexual women (48%), gay men (48%) and bisexual men (36%).

had injected drugs, a decline from 11% in the 1998 survey. Similar to 1998, a greater number of women than men (6% vs. 3%) reported using injecting drugs. No age differences emerged in patterns of use. Finally, 8% of the sample reported using other drugs (e.g., ketamine, LSD).

In the third study of this kind, Hillier et al. (2010) found that 9% of same-sex attracted youth surveyed reported smoking cannabis at least weekly; 9% used amphetamines at least monthly; 1% had used cocaine on more than one occasion; 3% used ecstasy at least monthly; 3% used inhalants at least monthly; 9% used sedatives at least monthly; 3% used hallucinogens on more than one occasion; 2% had taken non-prescribed simulants more than once; 2% had used heroin; and 4% had injected drugs.

In a survey of regular methamphetamine users in Sydney, Matheson et al. (2010) found that 58% of respondents reported that their primary drug of choice was crystal methamphetamine. Estimates for use of cannabis, speed, heroin, base, amphetamines, ecstasy, and GHB were all below 10%. High rates of recent use of all three forms of methamphetamine were observed (consistent with the recruitment criteria): 91% reported using crystal in the six months prior to interview, 56% had used base, and 47% had used speed powder. Moreover, 68% had injected crystal in the past six months, 47% had injected base, 32% had injected speed, and 78% had injected some form of methamphetamine.

Pitts et al. (2006) found that overall 15.7% of their GLBT cohort reported using cannabis, 9.1% used ecstasy, 5.1% used speed, and 3.1% used crystal methamphetamine. Use of other drugs was comparatively rare and use of one of these drugs more than five times in the previous month was reported by less than 1.5% of the sample.

Prestage et al. (2009) examined drug use among a sample of HIV-negative homosexually active men in Sydney. Those drugs most commonly reported in terms of monthly use included ecstasy and other amphetamine-type stimulants (23.1%) and amyl nitrite (16.8%). Drugs most commonly reported to be used weekly included amyl nitrite (20.4%) and cannabis (17.8%). By contrast, the authors found that large proportions of the sample reported never having used heroin (98.4%), psychedelics (91.1%), barbiturates/tranquilisers (85.5%), cocaine (76.2%), and methamphetamine (61.6%).

The Gay Community Periodic Surveys are cross-sectional, community-based surveys of gay and other homosexually active men routinely conducted in Adelaide, Canberra, Melbourne, Queensland, Perth, and Sydney. Holt et al. (2011) examined the period from 2000 to 2009 and found that the most commonly used drug amongst Australian gay and other homosexually active men is amyl nitrite. The authors note that nationally use of amyl nitrite has fallen from 37.6% in 2000 to 31.8% in 2009. Reported use of amyl nitrite has been generally stable in Canberra and Sydney over the past decade, though men in Sydney tend to report the highest level of use. Use of amyl nitrite has declined markedly in Melbourne and Adelaide.

Use of (meth)amphetamine (speed or crystal meth) amongst gay and other homosexually active men is decreasing, from 24.1% in 2000 to 16.1% in 2009, with the decline particularly evident in Adelaide. Elsewhere, particularly in Melbourne, Queensland and Sydney, rates have varied. Holt et al. (2011) note that prevalence rates across all states and territories have plateaued in the last three years, though use of (meth)amphetamine continues to be most common in Sydney.

Finally, the authors found that injecting drug use appears to be rarer among gay and homosexually active men, though rates are higher compared to the general population. Nationally, the proportion of men reporting injecting drug use in the past six months has

remained stable around 5-6%. Injecting drug use appears most common in Melbourne, Queensland, and Sydney, and least common in Canberra. Between 2000 and 2009, prevalence rates of injecting drug use have fluctuated across most states and territories, with the exception of Canberra and Perth. More recently, in the last three years, rates of injecting use have remained stable, with the exception of Queensland where it has increased.

Rawstorne et al. (2007) analysed data from the Sydney Gay Community Periodic Survey (SGCPS) and the Positive Health cohort study. The authors found that reported crystal methamphetamine use amongst men who have sex with men significantly increased from 2002 to 2005 amongst HIV+ and HIV- men in the SGCPS, and amongst respondents in the PH survey. In the SGCPS, a larger proportion of crystal users compared to non-users reported using other recreational drugs (classified as drugs apart from crystal or Viagra). For instance, more than 97% of crystal users in both HIV status groups reported using other recreational drugs in each year of the study.

Richters et al. (2002) collected data on drug use from the Sydney Gay and Lesbian Mardi Gras Fair Day and other gay/lesbian community venues and health services in 1998. Overall, the authors found that 8% of women in the sample reported having injected drugs in the six months prior to interview. Specifically, 14.5% of those recruited from clinics and community venues and 5.2% of the Fair Day respondents reported recent injecting drug use.

Comparing GLBT with non GLBT on illicit drug use

Turning now to the comparison studies, overall we located 7 Australian studies which included GLBT and heterosexual groups, and that measured illicit drug use (not including our own original analyses); these are described in Table 16. However, as with the Australian alcohol research, a number of these studies used a proxy general population measure (i.e. general population data taken from another survey such as the NDSHS) in order to make comparisons with their GLBT sample.

Analyses of the 2000 and 2003 waves of the Australian Longitudinal Study of Women's Health (ALSWH) undertaken by Hughes et al. (2010b) & Hillier et al. (2003) found that bisexual/lesbian women reported significantly higher rates of cannabis and other illicit drug use. Hughes et al. (2010b) found higher prevalence of past year cannabis use among bisexual women in particular, and found significantly higher rates of other illicit drug use among "mainly" heterosexual, bisexual, and lesbian females compared to exclusively heterosexual females. Similarly, in the 2000 ALSWH, Hillier et al. (2003) found that bisexual/lesbian women reported significantly higher use of cannabis and other illicit drugs, compared to their exclusively heterosexual counterparts, and also a higher prevalence of injecting behaviour.

Findings from the Western Australian Lesbian and Bisexual Women's Health and Well-Being Survey indicate that approximately one third of those surveyed reported using an illicit drug in the past six months, compared to approximately 10% of the general population who reported use in the past year (Hyde, et al., 2009). Specifically, use of cannabis (26.4%), meth/amphetamine (18.6%), and ecstasy (17.9%) were most commonly reported. Drugs such as analgesics, magic mushrooms, benzodiazepines, and methadone were infrequently used (<0.3%). Where comparisons with the general population were possible, greater prevalence figures were observed amongst the GLBT sample. Of those who reported using illicit drugs in the past six months, 10.4% reported injecting drug use during this period, which equates to 3.5% of the overall sample. Hyde et al. (2009) point out that whilst comparable measures of illicit drug use for the

general population were unavailable for 2006, the 2004 NDSHS found that 12.5% of women reported illicit drug use in the past 12 months and 0.3% reported injecting drug use.

Table 16: Prevalence findings for illicit drug use among GLBT; Australian studies with a non-GLBT comparison group

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
Population/random sample						
Hughes et al.	2010	Australian Longitudinal Study of Women's Health (2003)	Cannabis use (past year)	Exclusively heterosexual females	8,083	5.5
				Mainly heterosexual females	568	7.5
				Bisexual females	100	12.0*
				Lesbian females	99	5.2
			Other illicit drug use (past year)	Exclusively heterosexual females	8,083	12.9
				Mainly heterosexual females	568	40.9*
				Bisexual females	100	49.0*
				Lesbian females	99	40.2*
Hyde et al.[1]	2009	Western Australian Lesbian and Bisexual Women's Health and Well-Being Survey (2006-2007)	Any illicit drug use (past six months)	Lesbian/bisexual females	917	33.6*
			Any illicit drug use (past year)	Females (general population)	-	12.5
		Western Australia Health and Well-Being Surveillance System (2006) (proxy comparison group)	Any injecting drug use (past six months)	Lesbian/bisexual women	917	3.5*
			Any injecting drug use (past year)	Females (general population)	-	0.3
			Cannabis use in (past six months)	Lesbian/bisexual women	917	26.4*
			Cannabis use (past year)	Females (general population)	-	8.3
			Meth/amphetamine use (past six months)	Lesbian/bisexual women	917	18.6*
			Meth/amphetamine use (past year)	Females (general population)	-	2.5
			Ecstasy use (past six months)	Lesbian/bisexual women	917	17.9*
			Ecstasy use (past year)	Females (general population)	-	2.4
			Cocaine use (past six months)	Lesbian/bisexual women	917	6.5*
			Cocaine use (past year)	Females (general population)	-	0.8

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
			Heroin use (past six months)	Lesbian/bisexual women	917	1.0*
			Heroin use (past year)	Females (general population)	-	0.1
Hillier et al.	2003	Australian Longitudinal Study of Women's Health (2000)	Cannabis use (past year)	Exclusively heterosexual females	8,409	21.5
				Bisexual/lesbian females	797	58.2*
			Other illicit drug use (past year)	Exclusively heterosexual females	8,409	10.2
				Bisexual/lesbian females	797	40.7*
			Injected drugs (lifetime)	Exclusively heterosexual females	8,409	1.2
				Bisexual/lesbian females	797	10.8*
Roxburgh et al.	In preparation	National Drug Strategy Household Survey (2007)	Any illicit drug use (lifetime)	Homosexual/bisexual males	227	69.6*
				Heterosexual males	9143	41.3
				Homosexual/bisexual females	231	69.8*
				Heterosexual females	11863	34.4
			Any illicit drug use (past year)	Homosexual/bisexual males	227	44.0*
				Heterosexual males	9143	14.5
				Homosexual/bisexual females	231	38.4*
				Heterosexual females	11863	9.9
			Cannabis use (lifetime)	Homosexual/bisexual males	227	63.7*
				Heterosexual males	9143	37.4
				Homosexual/bisexual females	231	66.1*
				Heterosexual females	11863	30.1
			Cannabis use (past year)	Homosexual/bisexual males	227	27.8*
				Heterosexual males	9143	11.4
				Homosexual/bisexual females	231	32.3*
				Heterosexual females	11863	6.2
			Ecstasy use (lifetime)	Homosexual/bisexual males	227	39.1*
				Heterosexual males	9143	9.6
				Homosexual/bisexual females	231	29.3*
				Heterosexual females	11863	7.4
			Ecstasy use (past year)	Homosexual/bisexual males	227	26.2*
				Heterosexual males	9143	3.9
				Homosexual/bisexual females	231	7.4
				Heterosexual females	11863	2.5
			Methamphetamine use	Homosexual/bisexual males	227	25.5*

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
			(lifetime)	Heterosexual males	9143	7.4
				Homosexual/bisexual females	231	22.9*
				Heterosexual females	11863	4.6
			Methamphetamine use (past year)	Homosexual/bisexual males	227	13.5*
				Heterosexual males	9143	2.8
				Homosexual/bisexual females	231	4.6
				Heterosexual females	11863	1.4
			Cocaine use (lifetime)	Homosexual/bisexual males	227	23.1*
				Heterosexual males	9143	7.0
				Homosexual/bisexual females	231	15.9*
				Heterosexual females	11863	4.4
			Cocaine use (past year)	Homosexual/bisexual males	227	7.1*
				Heterosexual males	9143	2.2
				Homosexual/bisexual females	231	5.6*
				Heterosexual females	11863	0.9
Original analyses: Carragher, Matthew-Simmons, Ritter	2012	National Survey of Mental Health and Wellbeing (2007)	Drug abuse	Homosexual/bisexual	199	15.74 (3.13)
				Heterosexual	8,639	6.88 (0.38)
			Drug dependence	Homosexual/bisexual	199	5.65 (1.76)
				Heterosexual	8,639	2.73 (0.29)
Targeted/convenience sample						
Degenhardt[2]	2005	Australian Party Drugs Initiative (2003-2004)	Cannabis use (past 6 months)	Heterosexual females[1]	252	73.8
				Lesbian/bisexual females	76	76.3
				Heterosexual males	455	86.6
				Homosexual/bisexual males	69	78.3
			Methamphetamine use (past 6 months)	Heterosexual females	252	70.6
				Lesbian/bisexual females	76	60.5
				Heterosexual males	455	67.7
				Homosexual/bisexual males	69	65.2
			Base methamphetamine use (past 6 months)	Heterosexual females	252	31.3
				Lesbian/bisexual females	76	44.7*
				Heterosexual males	455	41.1
				Homosexual/bisexual males	69	40.6
			Crystal methamphetamine use (past 6 months)	Heterosexual females	252	41.7
				Lesbian/bisexual females	76	53.9*

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
				Heterosexual males	455	41.8
				Homosexual/bisexual males	69	63.8**
			Cocaine use (past 6 months)	Heterosexual females	252	28.6
				Lesbian/bisexual females	76	36.8
				Heterosexual males	455	26.4
				Homosexual/bisexual males	69	18.8
			Ketamine use (past 6 months)	Heterosexual females	252	17.9
				Lesbian/bisexual females	76	30.3*
				Heterosexual males	455	22.4
				Homosexual/bisexual males	69	36.2*
			MDA use (past 6 months)	Heterosexual females	252	14.7
				Lesbian/bisexual females	76	15.8
				Heterosexual males	455	14.9
				Homosexual/bisexual males	69	20.3
			GHB use (past 6 months)	Heterosexual females	252	7.5
				Lesbian/bisexual females	76	7.9
				Heterosexual males	455	11.0
				Homosexual/bisexual males	69	15.9
			LSD use (past 6 months)	Heterosexual females	252	19.0
				Lesbian/bisexual females	76	21.1
				Heterosexual males	455	31.9
				Homosexual/bisexual males	69	11.6*
			Nitrous oxide use (past 6 months)	Heterosexual females	252	25.0
				Lesbian/bisexual females	76	18.4
				Heterosexual males	455	31.9
				Homosexual/bisexual males	69	13.0*
			Amyl nitrite use (past 6 months)	Heterosexual females	252	16.7
				Lesbian/bisexual females	76	35.5*
				Heterosexual males	455	14.6
				Homosexual/bisexual males	69	49.3*
			Heroin use (past 6 months)	Heterosexual females	252	2.8
				Lesbian/bisexual females	76	15.8*
				Heterosexual males	455	5.7
				Homosexual/bisexual males	69	8.7

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
			Other opiates use (past 6 months)	Heterosexual females	252	5.2
				Lesbian/bisexual females	76	19.7*
				Heterosexual males	455	10.5
				Homosexual/bisexual males	69	13.0
			Benzodiazepine use (past 6 months)	Heterosexual females	252	23.8
				Lesbian/bisexual females	76	52.6*
				Heterosexual males	455	23.7
				Homosexual/bisexual males	69	36.2*
Murnane et al.[#]	2000	Beyond Perceptions (1998)	Amphetamine use (lifetime)	Lesbian/bisexual females (20-29 years)	25	48.0
		National Household Survey (1998) (proxy)[1]				
				Females (20-29 years)	-	18.4
				Lesbian/bisexual females (30-39 years)	69	44.9
				Females (30-39 years)	-	10.3
				Lesbian/bisexual females (40-49 years)	86	17.4
				Females (40-49 years)	-	4.3
				Lesbian/bisexual females (50+ years)	42	7.1
				Females (50+ years)	-	1.6
				Gay/bisexual males (20-29 years)	46	76.1
				Males (20-29 years)	-	20.7
				Gay/bisexual males (30-39 years)	88	64.8
				Males (30-39 years)	-	21.9
				Gay/bisexual males (40-49 years)	79	50.6
				Males (40-49 years)	-	7.0
				Gay/bisexual males (50+ years)	55	14.5
				Males (50+ years)	-	1.9
			Cocaine use (lifetime)	Lesbian/bisexual females (20-29 years)	25	16.0
				Females (20-29 years)	-	9.1
				Lesbian/bisexual females (30-39	69	17.4

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
				years)		
				Females (30-39 years)	-	6.6
				Lesbian/bisexual females (40-49 years)	86	7.0
				Females (40-49 years)	-	1.4
				Lesbian/bisexual females (50+ years)	42	0.0
				Females (50+ years)	-	0.8
				Gay/bisexual males (20-29 years)	46	30.4
				Males (20-29 years)	-	6.5
				Gay/bisexual males (30-39 years)	88	30.7
				Males (30-39 years)	-	9.5
				Gay/bisexual males (40-49 years)	79	29.1
				Males (40-49 years)	-	4.5
				Gay/bisexual males (50+ years)	55	9.1
				Males (50+ years)	-	0.9
			Ecstasy use (lifetime)	Lesbian/bisexual females (20-29 years)	25	36.0
				Females (20-29 years)	-	11.9
				Lesbian/bisexual females (30-39 years)	69	24.6
				Females (30-39 years)	-	3.7
				Lesbian/bisexual females (40-49 years)	86	2.3
				Females (40-49 years)	-	0.0
				Lesbian/bisexual females (50+ years)	42	7.1
				Females (50+ years)	-	1.6
				Gay/bisexual males (20-29 years)	46	65.2
				Males (20-29 years)	-	19.1
				Gay/bisexual males (30-39 years)	88	59.1
				Males (30-39 years)	-	9.5
				Gay/bisexual males (40-49 years)	79	36.7
				Males (40-49 years)	-	0.0
				Gay/bisexual males (50+ years)	55	12.7
				Males (50+ years)	-	1.9

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
			Heroin use (lifetime)	Lesbian/bisexual females (20-29 years)	25	0.0
				Females (20-29 years)	-	3.7
				Lesbian/bisexual females (30-39 years)	69	10.1
				Females (30-39 years)	-	2.9
				Lesbian/bisexual females (40-49 years)	86	4.7
				Females (40-49 years)	-	0.0
				Lesbian/bisexual females (50+ years)	42	0.0
				Females (50+ years)	-	0.0
				Gay/bisexual males (20-29 years)	46	10.9
				Males (20-29 years)	-	4.4
				Gay/bisexual males (30-39 years)	88	5.7
				Males (30-39 years)	-	6.5
				Gay/bisexual males (40-49 years)	79	10.1
				Males (40-49 years)	-	4.5
				Gay/bisexual males (50+ years)	55	0.0
				Males (50+ years)	-	0.9
			Cannabis use (lifetime)	Lesbian/bisexual females (20-29 years)	25	64.0
				Females (20-29 years)	-	55.0
				Lesbian/bisexual females (30-39 years)	69	88.4
				Females (30-39 years)	-	50.0
				Lesbian/bisexual females (40-49 years)	86	79.1
				Females (40-49 years)	-	26.1
				Lesbian/bisexual females (50+ years)	42	52.4
				Females (50+ years)	-	7.1
				Gay/bisexual males (20-29 years)	46	89.1
				Males (20-29 years)	-	67.2
				Gay/bisexual males (30-39 years)	88	83.0
				Males (30-39 years)	-	57.7

Author(s)	Year	Survey (Year of survey)	Measure	Population	N	Prevalence (%) (SD)
				Gay/bisexual males (40-49 years)	79	79.7
				Males (40-49 years)	-	50.0
				Gay/bisexual males (50+ years)	55	63.6
				Males (50+ years)	-	8.3
Richters et al.[#]	2005	Sydney Women and Sexual Health (2004)	Ecstasy use (past six months)	Lesbian/bisexual/queer females	407	28.3
				Females	-	2.3
		National Drug Strategy Household Survey (2001) (proxy)[1]	Heroin use(past six months)	Lesbian/bisexual/queer women	407	1.0
				Females	-	0.2
			Speed use (past six months)	Lesbian/bisexual/queer women	407	25.3
				Females	-	2.7
			Injected drugs (lifetime)	Lesbian/bisexual/queer women	407	9.3
				Females	-	3.6

Notes
* statistically significant from heterosexual group ($p < 0.05$), as reported by authors
[†]statistically significant from heterosexual group after accounting for other demographic factors ($p < 0.05$), as reported by authors (adjusted odds ratios)
[#]no significance testing undertaken between heterosexual and non-heterosexual groups
[1]Study used a "proxy" comparison group, taken from another survey (see Table for proxy studies used)
[2]Sample is regular ecstasy users

Murnane et al. (2000) compared patterns of use of a range of drugs between the NDSHS and a GLBT sample based in Victoria. The authors examined use in terms of past month and lifetime; due to a large number of empty cells across drugs, we report lifetime estimates in the table. In terms of amphetamine use, the authors found that the proportion of respondents reporting ever having used amphetamines generally decreased with age. Furthermore, across all age categories use was greater amongst women compared to men, and prevalence rates in the GLBT sample were higher than in the general population (however, statistical analyses were not undertaken to confirm statistical significance).

Amongst men, reported use of cannabis decreased with age in both the GLBT and general population samples, and use was higher generally in the GLBT sample. Similarly, across all age categories use was higher amongst women in the GLBT sample compared to the general population, particularly in terms of women aged 50 years and over.

In general, reported cocaine use was considerably higher amongst men and women in the GLBT sample compared to the general population. Furthermore, within the GLBT sample, use was higher amongst men compared to women. In both the GLBT and general population samples, reported ecstasy/designer drug use generally decreased with age, with the exception of women aged 50 years and over. Moreover, considerably more young men aged 20-29 years in the GLBT sample reported having ever used ecstasy or designer drugs compared to their counterparts in the general population (65.2% versus 19.1%).

In the GLBT sample, heroin use was highest amongst young men aged 20-29 years; thereafter, use decreased amongst those aged 30-39 years and increased amongst men aged 40-49 years. Use overall is higher amongst females in the GLBT sample than in the general population, with differences apparent in terms of age categories. A mixed pattern of use is apparent in the general population data.

Use of barbiturates was not widely reported amongst respondents in the GLBT sample, with the highest prevalence rate observed amongst men aged 20-29 years (8.7%). That being said, across all age categories reported use was higher amongst the GLBT sample than the general population.

In terms of ketamine, reported use amongst men in the GLBT sample declined with age, whereas only those young women aged 20-29 years reported using ketamine. Reported use of LSD amongst men and women in the GLBT sample declined with age. Amongst women in the GLBT sample, reported use of volatile nitrates decreased with age. Whilst men reported considerably higher levels of use compared to women, a similar pattern across age groups was not observed, with men aged 30-39 years instead reporting the highest levels of use. In terms of naturally-occurring hallucinogens, reported use was highest amongst men aged 40-49 years and women aged 30-39 years. Comparisons with the general population were not possible for ketamine, LSD, volatile nitrites, or naturally-occurring hallucinogens.

Use of steroids was generally greater among men and women in the GLBT sample compared to their counterparts in the general population, with the exception of women aged 50 years and over. Finally, reported use of tranquillisers was higher among respondents in the GLBT sample compared to the general population. Specifically, levels of use were highest amongst women aged 30-39 years and men aged 20-29 years.

Smith et al. (1999) found that reports of having ever injected drugs amongst a school sample of SSA and non-SSA youth was rare, with just 2.1% of the cohort reporting that they had ever injected and 1.1% reporting that they had done in the year prior to interview. However, gender differences were apparent with SSA males and females reporting higher rates of injecting drug use (both lifetime and past year reports) compared to their non-SSA counterparts. A summary of these national findings is provided in Table 16.

Richters et al. (2005) analysed data from the 2004 Sydney Women and Sexual Health survey, which included women recruited at the Sydney Gay and Lesbian Mardi Gras Fair Day and at other gay/lesbian community venues and health services in 2004. In comparison to figures of reported drug use amongst the general population in the past 12 months, gay and lesbian women recruited through Fair Day reported higher prevalence rates of cannabis, ecstasy, heroin, and speed in the six months prior to interview. Moreover, they also reported higher levels of injecting drug use compared to the general population. Use of cocaine, crystal meth, and GHB was infrequently reported by participants in the Fair Day subsample.

Based on a sample of 852 regular ecstasy users, Degenhardt (2005) observed significantly higher rates of use of ketamine, base methamphetamine, crystal methamphetamine, amyl nitrite, heroin, other opiates, and benzodiazepines amongst lesbian/bisexual women compared to heterosexual women. In terms of males, a more mixed pattern was observed. Compared to heterosexual males, homosexual/bisexual males reported significantly higher use of ketamine, crystal methamphetamine, amyl nitrite, and benzodiazepines. Conversely, heterosexual men reported significantly higher use of LSD and nitrous oxide compared to their homosexual/bisexual counterparts.

The Australian evidence-base is incomplete partly due to the inherent difficulties involved in defining or recruiting representative samples (King et al., 2008), and past reliance on small sample sizes and convenience samples which often lack a heterosexual comparison group (Hyde, et al., 2009). The inclusion of items measuring sexual orientation in recent population surveys facilitates analysis of the prevalence of mental disorders and substance use disorders amongst homosexual and heterosexuals in the general population for the first time (Balsam, Beauchaine, Mickey, & Rothblum, 2005).

As with alcohol consumption, the 2007 National Drug Strategy Household Survey (NDSHS) collects data on illicit drug use patterns. Roxburgh et al. (In preparation) compared self-report lifetime and past-year drug use between homosexual and heterosexual men and women (they used the term 'same-sex attracted' for the homosexual category). Results are detailed in Table 16. They found significant differences on any 'illicit drug use' between homosexual/bisexual and heterosexual respondents for both men and women and across lifetime (men 69.6% vs. 41.3%; women 69.8% vs. 34.4%); and for the last twelve months (men 44% vs. 14.5%; women 34.4% vs. 9.9%) in the expected direction; that is GLBT had significantly higher rates of any illicit drug use (see Table 16). This pattern is also reflected in individual analyses by drug type. As can be seen in Table 16, Roxburgh et al. (In preparation) found significantly higher rates in homosexual/bisexual respondents for lifetime use of cannabis, ecstasy, methamphetamine and cocaine. This pattern was repeated for last year use (all significantly higher in homosexual/bisexual respondents).

All of the above studies rely on estimates of consumption of illicit drugs. As noted elsewhere, consumption does not necessarily equate with harm, and in this instance a preferable measure is meeting diagnostic criteria for abuse or dependence. To date, there have been no published Australian studies of the rates of drug abuse/dependence diagnosis by sexual identity. Our

original work, using the NSMWB is the first to examine differential diagnostic rates of drug abuse/dependence between GLBT and heterosexual groups. The findings for our own analyses of the NSMHWB in relation to diagnosis of drug abuse and drug dependence are reported in Table 16. The rate of drug abuse diagnosis was higher in homosexual/bisexual respondents (15.74%) compared with heterosexual respondents (6.88%); likewise the rate of drug dependence diagnosis was higher (5.65%) compared to homosexual/bisexual respondents (2.73%). However, neither of these differences reached statistical significance (note: small sample sizes).

3.4 Summary and Conclusions: Alcohol and other drugs and GLBT

Whether examining the prevalence or frequency of alcohol or other drug use, or the presence of diagnosed alcohol or other drug use disorders, the research described above suggests that, like other psychological disorders and suicide, GLBT individuals are likely to be at greater risk.

Tobacco

- In the international literature, 12 of 15 comparison studies found significantly higher rates of tobacco use among GLBT populations.
- A number of studies showed that bisexuals in particular (of both sexes) had the highest rates of tobacco use.
- Limited Australian research also suggests a higher prevalence among GLBT.

Alcohol

- Measurement of alcohol use has varied across studies.
- In the international literature, 9 of 13 comparison studies found significantly higher rates of alcohol use disorders among GLBT populations.
- It would appear that the most problematic use is undertaken by lesbian and bisexual women.
- Alcohol use by gay/bisexual men may be less problematic (this may also be a function of the relatively high alcohol use by heterosexual men).
- Australian research suggests higher rates of risky and binge drinking among lesbian and bisexual women. There were no significant differences in the rate of alcohol use disorders between GLBT and non GLBT populations, as measured by the NSMHWB.

Illicit drugs

- Across both drug use, and diagnosed drug use disorders, a majority of studies showed significantly higher prevalence among GLBT compared to heterosexual populations.
- This indicates that not only do GLBT individuals use drugs at a greater rate than heterosexuals, but they are also more likely to engage in problematic use.
- Particular sub-populations of gay/bisexual men are likely to use particular drugs to a greater extent. These drugs include stimulants such as methamphetamine, and also inhalants. A notable trend was the significantly higher use of cannabis among bisexual women.

Australian research shows that the rate of drug abuse diagnosis was higher in homosexual/bisexual respondents (15.74%) compared with heterosexual respondents (6.88%); likewise the rate of drug dependence diagnosis was higher (5.65%) compared to

homosexual/bisexual respondents (2.73%). However, neither of these differences reached statistical significance.

4. DISCUSSION OF RISK FACTORS

The previous sections have indicated evidence of increased psychological disorder and problematic alcohol and other drug use among GLBT groups, when compared to heterosexuals. However, it is important to note that sexual orientation per se is not synonymous with greater risk, or a causal factor for poorer mental health. Within the literature examined for this report, a number of potential factors as to why GLBT individuals use alcohol and other drugs to a greater extent, or face higher rates of psychological disorders than the heterosexual population, have been identified. Many, but not all of these risk factors for psychological disorder (for instance, victimisation) can apply equally to GLBT and heterosexual groups. However in many cases these factors are experienced to a greater extent by the GLBT population. In addition, there are other risk factors which may apply exclusively to this population, such as homophobic abuse, or issues surrounding sexual orientation disclosure ("coming out"). Associations between sexual orientation and psychological disorder are likely to be mediated by these causal factors, and some research has shown that once these factors are accounted for, there is often little difference between GLBT and heterosexual groups (Garofalo, et al., 1999; McCabe, Bostwick, Hughes, West, & Boyd, 2010; Needham & Austin, 2010).

It is worth keeping in mind that one of the most important risk factors for a psychological disorder (or a suicide attempt) in this population, is the existence of another disorder. For instance, a number of studies have revealed depression to be a strong risk factor for suicidality within these populations (Silenzio, Pena, Duberstein, Cerel, & Know, 2007; van Heeringen & Vincke, 2000). Similarly, an Australian study of gay men attending general practices (Holt, et al., 2011), found that men who had used three or more drugs in the past six months were three times more likely to have major depression compared to other men. There are a range of other independent risk factors that are described below.

4.1 Self identification

As discussed earlier in this report, there are different ways in which sexual orientation has been measured in the research literature; differentially classified in terms of self identification, sexual attraction, or behaviour (Talley, et al., 2010). Whilst many people self-identify as gay, lesbian, bisexual or transgender, there are other individuals who engage in same-sex activity and yet do not self-identify in this way. Additionally, self-identification can be fraught, as demonstrated in the Lesbian, Gay and Bisexual Identity Scale (LGBIS) which includes questions concerned with internalised homonegativity/bi-negativity (e.g., I would rather be straight if I could); self-honesty (e.g., admitting to myself that I am a GLB person has been a very painful process); and identity confusion (e.g., I'm not totally sure what my sexual orientation is) (Willoughby, Doty, & Malik, 2010). These dimensions indicate some of the complexity of the notion of self-identification that GLBT individuals may face when considering their sexual identity.

Often studies which have measured sexual orientation/identity in different ways (self-identity versus same sex attracted versus sexual behaviour) have reported differences in the prevalence of psychological disorders within these groups. For instance, McCabe et al.'s (2009) analysis of the NESARC showed that 13.3% of women who identified as lesbian met criteria for past year alcohol dependence; compared with 5.1% of those women who reported attraction to women only. Similarly, Bostwick et al.'s (2010) analysis found that 44.4% of women who identified as lesbian reported any lifetime mood disorder, compared to 23.8% of those women who reported only same sex attraction, and 19.4% of women who reported only same sex behaviour. This would suggest that self-identifying as GLBT alone may be a risk factor for disorder.

Other studies however have shown a different relationship, with those self identifying as homosexual having a lower prevalence of drug use, relative to heterosexual people who engage in same sex behaviour. A survey of men who had sex with men (MSM) from seven urban areas in the United States revealed significant differences between groups who self identified as gay, bisexual, or heterosexual. Twenty five per cent of those MSM who identified as homosexual reported using illicit drugs once or more per week. This compared to 33.9% of those who identified as bisexual (OR: 1.7), and 53.8% of those who self identified as heterosexual (OR: 3.6) (Thiede, et al., 2003). Kelly and Parsons (2010) also found similar findings for prescription drug use among MSM.

What these findings indicate is the relationship between sexual orientation identification and psychological disorder/drug use is complex and possibly different for women and men; whilst the NESARC analyses showed that a non-heterosexual identity resulted in increased problems, the studies of MSM showed the opposite, that those with a heterosexual identity (but same sex behaviour) exhibited *more* drug use. On the other hand, in terms of alcohol dependence, the McCabe et al. (2009) study mentioned above showed a similar pattern for men as it did for women. 16.8% of men in that study satisfied criteria for past year alcohol dependence, compared to 9.4% of those who were attracted only to men, and 7% of those who had only same sex behaviour.

Bostwick et al. (2010) argued that for men in the NESARC, increased rates of *lifetime* (not 12 month) disorders were generally associated with *any* sexual minority status, whether defined by identity, attraction or experience, whereas for women, those who had same sex attraction or behaviour, but did *not* identify as lesbian or bisexual, had lower rates of mood or anxiety disorders. The authors suggest that the consistency of findings in relation to men, compared to the variation in women (depending on how "non-heterosexuality" was defined) could be a result of the more extreme stigma associated with male homosexuality in the United States, with more negative attitudes towards gay men than lesbian women.

In addition to the issue of self identification versus behaviour or attraction, is the issue of *what* non-heterosexuals identify as. Australian research undertaken is interesting in this regard. In the Australian Longitudinal Study on Women's Health Survey (Hughes, et al., 2010b; McNair, et al., 2005) women were asked to self-identify as heterosexual, "mainly heterosexual", bisexual, or lesbian. Women who identified as "mainly heterosexual" were significantly more likely than "exclusively heterosexual" women to report at-risk drinking, and those who identified as bisexual were more likely to report cannabis use. Mainly heterosexual and bisexual women were also more likely to report binge drinking (Hughes, et al., 2010b). These findings are concordant with our review showing that across many MH and AOD areas bisexuals have the highest rates of problems.

There are other complicating factors. For instance, for some GLBT individuals, drug use may be a way to connect with the mainstream gay community (Bauermeister, 2007), whereas concealing this identity may reduce the incentive to engage in drug taking. It is also worth noting that another study which looked at the relationship between the strength of homosexual identity and drug use, in a small sample of gay men, found no relationship between the two variables (Ghindia & Kola, 1996).

At this point, there is no definitive answer as to how self-identification might be a independent risk factor for drug use or psychological disorder. However, the NESARC studies (which are the most generalisable to other populations) indicate that for women in particular, same sex attraction or behaviour alone may not result in a greater risk of psychological disorder, rather,

that self-identification as a lesbian, bisexual, or other "non-exclusive-heterosexual" may alone be associated with a higher prevalence of disorder.

4.2 Relationship status

In general, being in a relationship, in particular being married, is a protective factor for psychological disorders for all individuals, regardless of sexual orientation (Scott, 2010). Studies of GLBT populations have shown concordant results. Ayala and Coleman (2000) found that in a sample of lesbian women, those in a relationship had significantly lower depression scores. Similarly, analyses undertaken by Gillespie and Blackwell (2009) showed that those GLBT individuals in an intimate relationship had fewer problems associated with substance use. Bostwick et al. (2005) found that being in a relationship was a protective factor for depression.

Whilst being in a stable relationship is a protective factor, having multiple sexual partners may be a risk factor for elevated drug use (Hickson, Bonell, Weatherburn, & Reid, 2010) and suicide attempts (Wichstrøm & Hegna, 2003) in particular. DuRant et al. (1998) analysed the Vermont Youth Risk Behavior Survey, and found that male students who had multiple male sexual partners reported more frequent suicide attempts. In addition, male students with multiple male sexual partners reported more frequent use of tobacco, alcohol, and cannabis while at school than male students with multiple female sexual partners. Similarly, Boyd et al. (2003) found that the higher the number of sexual partners in a sample of adolescent students, the greater the level of ecstasy use.

4.3 Relationships with family and friends

A number of studies have shown that GLBT identity may be associated with weaker relationships and less social support (Bos et al., 2008; Eisenberg & Resnick, 2006; Jorm, et al., 2002). Eskin et al. (2005) found that perceived paternal closeness was related to homosexual behaviour and identity; students reporting same-sex sexual behaviour and self-identifying as homosexual or bisexual felt greater distance between themselves and their fathers than those who did not report homosexual behaviour or identity. A lack of relationships or support from family and friends is another potential risk factor for the development of MH or AOD problems in GLBT individuals.

Bos et al. (2008) found that high school students who reported same sex attraction rated the quality of their relationships with their fathers and peers lower than those without same sex attraction, and also reported higher depression scores. In a large sample of 18-26 year olds, Needham and Austin (2010) found that lesbian and bisexual women reported lower levels of parental support than heterosexual women, and gay men (but not bisexual men) also reported lower levels of parental support than heterosexual men. The authors also found that parental support was inversely associated with mental health and drug use outcomes. In some cases, differences in perceived parental support explained why GLBT adults reported worse health-related outcomes than their heterosexual peers. For instance, among young women in the sample, parental support fully mediated the relationship between bisexual identity and high depressive symptoms, and partially mediated the relationship between sexual orientation and drug use.

Willoughby et al. (2010) utilised a sample of 81 GLB young people to identify the relationships between victimisation, family rejection of sexuality, and outcomes including substance use severity, tobacco use, and internalising problems such as depression or anxiety. The analyses found a significant relationship between both family rejection and victimisation (related just to

sexuality), and negative GLB identity, which was significantly associated with internalising problems. Family rejection of sexual orientation was also directly significantly associated with substance use severity. Ryan et al. (2009) also examined the extent of family acceptance of adolescent's GLB status, and found that family rejection of GLB adolescents was associated with greater prevalence of depression, suicidality, and drug use. Other studies that have found a relationship between social support and mental health among GLBT populations include Goldberg & Smith (2011), Oetjen & Rothblum (2000), Van Heeringen (2000), and Lackner et al. (1993).

4.4 Residential context/community belonging

Living in "gay specific" communities or habitating "gay friendly" venues such as bars and nightclubs may increase the likelihood that one will engage in illicit drug use. In a survey of urban gay men residing in New York City, Carpiano (2011) found that residing in a "gay enclave"; an area with a high proportion of gay specific venues, was significantly related to higher methamphetamine and ecstasy use. Similarly, Stall et al. (2001) found that attendance at gay bath houses and sex clubs were associated with fewer alcohol problems, but greater polydrug use. Again, it is important to recall that greater amounts of alcohol and/or illicit drug use are not necessarily associated with problematic use or the development of dependence syndromes.

Related to the residential context in which people live, is the extent to which they are integrated into the community. Some aspects of "gay culture" are thought to involve a strong association with illicit drug use. For instance, Biaocco et al. (2010) conducted a survey of 119 gay and lesbian Italian youth, and found binge and heavy drinking associated with higher levels of engagement in gay community activities. Carpiano's (2011) study of gay men also found that higher socialisation with other gay men was significantly related to higher illicit drug use and poly drug use. In contrast, McCallum & McLaren (2011) surveyed a sample of GLBT adolescents and found that a greater sense of belonging to the *general* community (not specifically the GLBT community) was associated with less depression.

4.5 "Coming out"

A major event in the lives of many GLBT individuals involves the disclosure of their sexual orientation to others (commonly referred to as "coming out"). It is commonly thought that this act represents an indication of self-acceptance, and that disclosure may also remove some of the stress associated with concealing one's sexual orientation and facilitate greater support from friends and family (Rosario, Schrimshaw, & Hunter, 2009). As such, disclosure has been widely hypothesised to be associated with increased self-esteem, reduced depression, and/or problematic drug use among GLBT populations. However, the relationship between "coming out" (disclosure of homosexual/bisexual orientation) and problematic drug use/mental well being is complex. Whilst sexual orientation disclosure has been found to be associated with lower depression (Ayala & Coleman, 2000) and anxiety (Jordan & Deluty, 1998), Ploderl et al. (2010) found that coming out to only a few people was associated with a greater risk of suicide attempt than not coming out at all. In Thiede et al.'s study (2003) of those who had come out to more than half the people they knew, 31.8% reported using illicit drugs once or more per week, compared to 23.5% of those who had not come out or who had come out to less than half the people they knew. These findings indicate that among MSM who identify themselves as bisexual or heterosexual, and who have "come out" about having sex with men, there exists a subgroup of young MSM who may be at especially high risk of more serious drug use

The relationship between coming out and drug use/mental health is also likely to be moderated by the perceived reactions of those close to the individual. Rosario et al. (2009) examined longitudinal data from 156 GLB youth in New York City. They found that the number of perceived rejecting reactions arising from the disclosure of sexual orientation could predict levels of substance use; the higher the number of "rejecting" reactions experienced by youth, the greater the frequency of substance use, and the more frequent symptoms of substance abuse were reported (Rosario, et al., 2009). Also related to the influence that "coming out" may have, is the age at which individuals first experience homosexual attraction or behaviour. A number of studies have shown that the earlier one's homosexual experience, the worse the outcomes may be. Those who experience landmarks at a younger age (e.g. awareness, disclosure, experience) were more likely to experience harassment, and more likely to experience depression (Friedman, et al., 2008). This extends to both mental health problems (van Heeringen & Vincke, 2000) and substance use (Talley, et al., 2010).

4.6 Abuse and victimisation

Abuse and victimisation, such as childhood physical abuse, sexual abuse, or any other kind of abuse, is an experience that is predictive of psychological and other problems later in life for all individuals, and not just the GLBT population (Dube et al. 2003; Mullen, Walton, Romans-Clarkson, & Peter Herbison, 1988). However, the rates at which GLBT individuals experience abuse and victimisation are greater than for heterosexuals; research has shown that GLBT individuals are more likely to experience sexual and or physical abuse (Cochran, et al., 2002; Whitbeck, et al., 2004), and perceived discrimination (Mays & Cochran, 2001). Higher rates of childhood sexual abuse may be attributable, in part, to lesbians' greater willingness to acknowledge and report this experience (Hughes, et al., 2010a). Hughes et al. (2010a) found that relative to heterosexuals, sexual minority women and men are at heightened risk for life-time victimisation, particularly childhood sexual abuse, with three times as many lesbians (34.7%) as heterosexual women (10.3%) reporting this experience. Harassment in school is also more prevalent among GLBT youth than heterosexual youth (Reis & Saewyc, 1999)

Bontempo and D'Augelli (2002) analysed data from the Massachusetts and Vermont Youth Risk Behavior Surveys. They found that victimisation at school was disproportionately associated with sexual orientation, and secondly, those GLBT youths which had been exposed to a higher level of victimisation were significantly more likely to engage in tobacco use, more frequent alcohol use, illicit drug use, and were more likely to have attempted suicide. Similarly, Hughes et al. (2010a) found that gay men were more likely to report childhood sexual abuse, childhood neglect, partner violence and assault with a weapon. In the study, women who reported two or more victimisation experiences had two to four times the odds of alcohol dependence, drug abuse and drug dependence as women who reported no victimisation. Men who reported two or more victimisation experiences had higher odds of all four SUD outcomes, but odds were smaller than those observed in women.

A number of other studies have found links between elevated childhood physical and sexual abuse, and a range of health outcomes in GLBT samples (Cooperman, et al., 2003; Gold, Feinstein, Skidmore, & Marx, 2011; Hughes, et al., 2010a; Otis & Skinner, 1996; Welch, Collings, & Howden-Chapman, 2000; Whitbeck, et al., 2004).

Victimisation appears predictive of suicide attempts (Bontempo & D'Augelli, 2002; D'Augelli & Grossman, 2001; Goodenow, et al., 2006; Plöderl, et al., 2010; Waldo, Hesson-McInnis, & D'Augelli, 1998). For instance, Matthews et al. (2002) found that suicidal ideation and suicide attempts (as well as the depression measure used in their study) were strongly associated with

childhood sexual and physical abuse. Women with histories of sexual or physical abuse were two to three times more likely to have had thoughts of killing themselves and to have acted on these thoughts. Past traumatic experiences, such as sexual or physical abuse, may add to the vulnerability of young lesbians, who may be grappling with issues related to sexual disclosure, and may increase the risk of suicide in this group. Sexual abuse has been found to be associated with greater drug use (Descamps, Rothblum, Bradford, & Ryan, 2000; Stall, et al., 2001; Thiede, et al., 2003).

There are a number of studies that find a strong association between experiences of discrimination and alcohol and other drug problems. For example, McCabe et al (2010) found a greater likelihood of substance use disorders among GLBT adults who reported discrimination, and that nearly half of GLBT adults who reported discrimination (on the basis of gender, race/ethnicity, and sexual orientation) in their lifetimes met the criteria for past-year substance use disorders, compared with less than one in five of those who reported no discrimination. In addition, those GLBT adults who reported none of the three types of discrimination in their lifetime, had rates of past-year substance use disorders that were similar to those of heterosexual adults (McCabe, et al., 2010). Birkett et al. (2009) analysed a large survey of high school students in the northern United States and found that in a sample of school students, those GLBT students who had experienced homophobic teasing reported a significantly higher rate of alcohol and cannabis use. Similar results have been found by Friedman et al. (2006) and Warner et al. (2004).

In addition, GLBT individuals like other "minority" populations are at greater risk of certain types of victimisation such as hate crimes, which the heterosexual community may not experience. Hate crimes are "criminal actions intended to harm or intimidate people because of their race, ethnicity, sexual orientation, religion, or other minority group status" (Herek, Gillis, & Cogan, 1999, p. 945). As a minority group, GLBTs may be the target of hate crimes, over and above other crime experiences that apply to GLBTs and heterosexuals alike. Hate crimes may involve a range of offences, including assault, sexual assault, theft, or vandalism, but are considered to be perpetrated because the victim is thought to be a sexual minority. A study by Herek et al. (1999) found that recent hate-crime victimisation was associated with greater psychological distress for gay men and lesbians than is victimisation in a recent "non-bias" crime. Lesbians and gay men who experienced an assault or other person crime based on their sexual orientation within the previous 5 years reported significantly more symptoms of depression, traumatic stress, anxiety, and anger than did their counterparts who experienced crime perceived to be unrelated to their sexual identity in that period (or experienced no crimes at all). Willoughby et al. (2010) found in a sample of GLBT youth that victimisation related to sexuality, was significantly associated with higher tobacco use. In a similar study, Williams et al. (2005) found that in a sample of GLBT youth, a greater number of victimisation experiences (including sexual minority specific victimisation) was associated with a greater number of depression symptoms.

4.7 Stigma and Minority stress

A particularly important risk factor for psychological disorder among GLBT individuals is *minority stress*. This term refers to the higher levels of stress experienced by stigmatised minority groups. It can be experienced by minority groups other than GLBT, for instance, drug users (Australian Injecting and Illicit Drug Users League, 2011), however is highly relevant for the GLBT population. Meyer has distinguished four minority stress processes related to GLBT status: experiences of prejudice events, expectations of rejection or discrimination, hiding and concealing of one's sexual orientation, and internalised homophobia/homonegativity (i.e., the

internalisation of negative societal attitudes toward GLBT) (Kuyper & Fokkema, 2011; Meyer, 1995).

A number of research studies have examined how minority stress/internalised homophobia can impact on psychological wellbeing in this population. For instance, Kuyper & Fokkema (2011) found that participants with a higher level of internalised homonegativity, and those who more often encountered negative reactions from other people on their same-sex sexual attraction, reported more mental health problems. Similarly, Berg et al. (2011) found that those MSM who were less comfortable with their sexuality used tobacco more often. However, this factor may not always increase the risk for drug and alcohol use. For instance, Spinardi-Pirozzi (2009) found that internalised homophobia was not a predictor of alcohol use among GLBT young adults.

In terms of discrimination, Zakalik and Wei (2006) found that perceived discrimination was associated with greater prevalence of depression in a sample of gay men. Austin and Irwin (2010) examined three different measures of minority stress, including experiences of discrimination, stigma, and internalised homophobia. The study found that each of these factors was significantly associated with problematic alcohol use. Other studies have found similar findings regarding a range of mental health problems, and drug use in association with discrimination (Goldberg & Smith, 2011; Lehavot & Simoni, 2011; Lewis, Derlega, Griffin, & Krowinski, 2003; Meyer, 1995).

4.8 Summary and conclusions

Overall, there are a range of risk and protective factors related to drug use and mental health. Some of these are relevant for both GLBT and non-GLBT populations. However, many of these risk factors are experienced to a greater extent by GLBT populations than heterosexual populations. This chapter explored seven factors: self-identification; relationship status; relationships with family and friends; residential context; "coming out"; abuse and victimisation; and stigma and minority stress[18]. Each of these factors contributes towards further understanding the risk factors associated with GLBT in the development of alcohol and other drug and/or mental health problems. This provides the context for examination of effective interventions. Interventions aimed at reducing either mental health problems or alcohol and drug problems (or both) could beneficially focus on these risk factors. The next chapter consider the full array of interventions for AOD and MH amongst GLBT – ranging from preventative initiatives (such as reduction in institutional discrimination) to targeted cognitive-behavioural interventions for drug use.

[18] Many of these factors are likely to be inter-related; for example the process of "coming out" may have implications for relationships with family and friends.

5. INTERVENTIONS

This chapter reviews the existing literature in relation to interventions for mental health and AOD amongst GLBT. As is clear from the preceding chapters, the rates of mental health and alcohol and drug problems are often higher in GLBT populations than in non-GLBT populations. To what extent, then, do current services adequately cater for the GLBT community? What are the treatment seeking rates for GLBT and how do they compare with non-GLBT people with AOD and/or MH problems? What evidence is there that GLBT populations require tailored services? To what extent is there evidence that GLBT-specific services are more effective, efficacious, and cost-effective? Is there evidence that they are equally effective irrespective of sexual orientation? How can programs be tailored to better meet the needs of GLBT? These questions informed our review of the literature.

More than 110 articles, reports and papers were sourced and reviewed that described AOD or MH interventions with GLBT people. Of these, the majority were AOD (just under half), with one quarter being concerned with MH. The remaining articles included descriptive pieces regarding adolescent development and treatment needs without specifying a target behaviour, workforce development papers and a handful on policy interventions. In the main, there were few studies that were directly comparative of GLBT and non GLBT treatment approaches. As with the epidemiological literature, there were almost no papers concerned specifically with interventions for transgender people, with the exception of Carroll (2002). We have continued to use the generic "GLBT" in this chapter but refer to individual studies based on their population group.

The interventions which are covered in this chapter are broad-ranging. We start with those interventions targeted towards prevention of the onset of problems, health promotion, social marketing and societal interventions, including legalising same sex marriage. We then turn to treatment interventions, and within this explore the rates of treatment access, evidence for treatment effectiveness, and the distinctions between GLBT-sensitive and GLBT-specific services.

5.1 Prevention, social marketing and public policy

Prevention, for the purposes of this report, focuses on preventing the development of mental health disorders or problematic alcohol or other drug use. As will have been noted in the earlier chapters, we do not consider the use of alcohol or other drugs per se as problematic. Indeed, many GLBT people enjoy alcohol and drugs in ways that non GLBT people also enjoy pleasurable experiences from substances. Prevention in this context is therefore not concerned with preventing any use, but with preventing the development of problematic, harmful or dependent use of alcohol or other drugs. Prevention interventions are targeted at the causal or precursor factors to the development of MH or AOD problems.

A focus on young people

Youth are clearly a central target in prevention efforts – and schools and families are important conduits for young people as they develop awareness of their sexual identity/identities. Adolescence is a critical time for access to supportive counselling for those young people coming to terms with their sexuality (SAMHSA, 2001). As Howard and Arcuri note "Numerous writers note that same-sex attracted young people must come to understand themselves in a society that assumes heterosexuality, provides them with scant positive information about who they are, and often reacts negatively to their enquiries. They find where they belong and how they fit within a

social structure that either offers few guidelines for doing so, or tells them that they have no place" (Howard & Arcuri, 2006, page 103).

Savin-Williams (2001a) reminds us that the challenges of adolescence are not necessarily different between GLBT and non-GLBT young people, and also points out that GLBT youth are not a homogenous group (see also Eccles, Sayegh, Fortenberry, & Zimet, 2003). In relation to prevention interventions then, supportive counselling provided at this time is likely to substantially reduce the risk of later mental health or substance misuse problems. Likewise some interventions tailored towards GLBT needs, such as "coming out" interventions are warranted. Fontaine & Hammond (1996) describe the stages of 'identity development' and the counselling tasks associated with them (see also Johnson & Johnson, 2000 for descriptions of social and psychological development in adolescence and challenges for gay young people. See also: Radkowsky & Siegel, 1997; Travers & Schneider, 1996).

"Coming out" support groups or counselling for "coming out" have been noted in a number of research papers as an important support service that effectively operates as a preventative measure against future mental health or substance misuse problems (D'Augelli, 1993; Fontaine & Hammond, 1996; SAMHSA, 2001). Validation of their experiences and positive gay role models have also been noted as essential in adolescence to successfully negotiating this stage of life as a GLBT person (Radkowsky & Siegel, 1997). Parents may need support in such situations, but may not know where or how to access information or assistance, or may be too embarrassed to do so. Resources which may assist parents and friends are available, including literature, websites and organisations such as *Someone You Love* PFLAG (Parents and Friends of Lesbians and Gays).

Social marketing and community prevention activities

Social marketing campaigns directed towards healthy lifestyles that have been designed and targeted for the GLBT community have previously been implemented (for example see Leibel et al., 2011). There has been little evaluation of the effectiveness of these social marketing campaigns. Given the high affinity of social venues with drug and alcohol use, social marketing interventions have used 'popular opinion leaders' to change norms and improve health behaviours in GLBT venues. These have demonstrated some effect in relation to sexual risk behaviour (see Leibel et al., 2011).

Specific to certain settings, there are number of 'environmental' measures that could prevent the development of MH or AOD problems. These include "safe places" on university campuses for GLBT people to congregate (D'Augelli, 1993); the secondary school "Gay Straight Alliance" which is a student-led student run program, "whose goals involve improving the school climate for LGBT youth and educating the school community about sexual minority issues" (Heck, Flentje, & Cochran, 2011). This has been demonstrated to be effective in that GLBT from secondary schools with Gay-Straight Alliances have lower alcohol use, depression and psychological distress at University (Heck, et al., 2011). Another 'environmental' prevention measure has been noted – smoke free bars (Leibel, et al., 2011). Given the high rates of smoking among GLBT (see earlier section of report) plus the known importance of GLBT-friendly social venues, such as bars and clubs, "the LGBT bar provides a potentially important venue for reaching a population with high tobacco use prevalence" (Leibel, et al., 2011).

Given the higher rates of victimisation amongst GLBT (Hughes, 2003) there are strong arguments that MH and AOD problems could be prevented if early experiences of victimisation (including childhood physical and sexual abuse and relationship violence) were addressed in therapeutic ways. In Padilla et al., (2010), a positive reaction and maternal acceptance of "coming

out" was protective of drug use (engagement with a GLB community group showed no effect). Societal acceptance of GLBT, which in turn influences individual parents towards a more accepting attitude toward their own children would prevent future AOD problems.

In a now-dated paper, the importance of community prevention responses, coming from within the GLBT community, tailored to specific local characteristics was highlighted (Mongeon & Ziebold, 1982). Heightening community consciousness and sense of responsibility which would influence normative practices within the community have been suggested (along with individual programs aimed at increasing self-esteem). Braine et al. (2011) also describe a community preventative response to crystal methamphetamine use amongst MSM. Campion et al. (2012) provide a big picture summary of mental health prevention efforts at the population level, and note the high risk needs of GLBT. Interventions include improving social ties, education and awareness of mental health issues, and healthy lifestyles.

Early interventions are aimed at people who are consuming alcohol or other drugs and are at risk for the development of dependency. Brief interventions, focussed on reducing consumption rather than abstinence, are well-suited to this population. Morgenstern et al. (2009) studied the effectiveness of brief motivational interviewing (MI) interventions for club drug using men who have sex with men (MSM, of which some proportion would consider themselves gay). In this randomised controlled trial, four sessions of motivational interviewing compared to an education control was found to significantly reduce club drug use (over a one-year follow-up period). MI was not effective in reducing club drug use amongst those with moderate levels of drug dependency, and it did not reduce risky sexual behaviour.

Suicide prevention

Haas et al. (2010) note the consensus among experts that the elevated rates of suicide found in GLBT people is associated with the discrimination, stigma and marginalisation of this population. Therefore suicide prevention strategies that are aimed at reducing discrimination and stigma are likely to be effective (see later section). In addition, all the interventions for alcohol and other drug and for mental health problems may have a preventative effect for suicide. Haas et al. (2010) note that Attachment-Based Family Therapy is being piloted for GLBT adolescents, with its focus on suicide and depression. Haas et al. (2010) also point to guidelines for developing GLBT sensitive services within MH settings – again, while not specifically suicide prevention focussed, these guidelines aim to improve the accessibility and availability of culturally appropriate services for GLBT people. The most effective suicide prevention measures as shown by fairly rigorous assessment in suicide prevention are predominantly 'environmental' and to do with the "access to means" - guns, barbiturates, gas, hotspots and so on. Specific suicide prevention campaigns, developed in collaboration with the GLBT community include "awareness campaigns and educational programs for the general public, primary care physicians, and community and organizational gatekeepers; screening programs, hotlines, and other activities that identify at-risk individuals and direct them to treatment; restriction of lethal means used for suicide; and programs that promote media as an avenue for public suicide prevention education, and discourage coverage that glamorizes or normalizes suicide" (Haas et al., 2010, page 37-38). Importantly, these prevention programs must be tailored to the GLBT community. (See also National LGBTI Health Alliance 2012).

Preventing harms

Self-directed harm reduction strategies, which build on the resilience and commitment of the GLBT community to self-care have been reported in the literature. For example, Greenspan et al (2011), in surveying gay and bisexual men in Canada, documented five harm reduction strategies deployed by the gay/bisexual men. These were: rationing of drugs; carefully selecting types or combinations of drugs; controlling quality; maintaining a healthy lifestyle; and following guidelines for substance use (eg drinking water). Identifying those harm reduction strategies already employed within the community affords opportunity to build upon these by institutions/organisations who already engage in harm reduction interventions. In Sydney, ethnographic work (Southgate & Hopwood, 2001) revealed the use of 'folk pharmacology' as one way of circulating knowledge and practices about drugs and their associated risks. Debating drug issues in the gay press was also noted as an important harm reduction strategy, along with 'network nannies' who provided care and support to others (Southgate & Hopwood, 2001). The authors do also provide a cautionary tale (in relation to GHB) demonstrating how both folk pharmacology and network nannies may inadvertently increase harmfulness.

Preventing discrimination and stigma

Discrimination and stigma have been identified as causal factors underlying the higher rates of MH and AOD problems in GLBT people. "Internalised homophobia" is a term used in the clinical treatment literature to describe the internal conflict experienced by GLBT people, given their exposure to discrimination and stigma (eg: Herek, 2004; LaSala, 2006; SAMHSA, 2001). As noted elsewhere in this report, the consequences of stigmatisation and discrimination include poor mental health. While there are many GLBT people who do not experience 'internalised homophobia' it is likely to be more common in those people with alcohol or other drug dependencies or mental health problems (Kuyper & Fokkema, 2011; Meyer, 2003). Treatment for those with mental health problems therefore arguably has to address the psychological consequences of stigma. LaSala (2006) argues for the establishment of a strong therapeutic alliance followed by cognitive therapy to address stigma-related feelings (such as anxiety and depression). This author also argues for environmental interventions against stigma. Examples include promoting equal rights legislation, and addressing sources of stigma and discrimination in the client's family, school or work environment (LaSala, 2006).

In a systematic review of interventions directed towards reducing stigma Livingston et al. (2012) classified studies into three targets of stigma: 1. Self-stigma (that is one's own perceptions of oneself, as per the internalised homophobia notion); 2. Social stigma arising from general public attitudes and 3. Structural stigma, from professional groups. There were 13 studies that met inclusion criteria for the systematic review, three focussed on self-stigma; three on social stigma, and seven on structural stigma. The interventions across these three types of stigma all resulted in decreases in stigma on some measures. The interventions included acceptance and commitment therapy (self-stigma); communicating positive stories (social stigma); and training and education programs (structural stigma). The authors note that more research is required across multiple population groups (Livingston et al., 2012).

The absence of legal and social recognition of same sex relationships is one example of discrimination. There are known health benefits of marriage, not limited to the financial advantages (Buffie, 2011). People who are married experience both tangible (eg access to government support) and intangible benefits (eg social support), and married people have, on average, better mental health (Herdt & Kertzner, 2006). Mathy & Lehmann (2004) found significant associations between marital status and suicidality, alcohol and other drugs problems

and psychiatric treatment, where lesbian and bisexual women had substantially higher rates of problems. The absence of legal recognition of relationship status has been documented to impact on individuals' well-being and mental health (see Herdt & Kertzner, 2006 for a review).

There is a small but compelling literature that demonstrates the relationship between recognition of same-sex marriage and improved mental health status and reduced AOD problems. Hatzenbuehler et al. (2009) examined changes in the rates of psychiatric diagnoses between 2001/2 and 2004/5 in those American states that (in 2004 and onwards) limited the definition of marriage to be between man and woman. They found that in those states where there had been a legislative amendment to limit the definition of marriage to be between a man and woman, there were significant increases in alcohol use disorders among homosexuals. Controlling for time effects, there were no increases in alcohol use disorders amongst homosexuals in states without the amendment. Interestingly, these findings were not replicated for illicit drug use disorders. Contrary to their hypothesis, they found increases in illicit drug use amongst GLBT in states without amendment. For mental health mood disorders – there were significant increases amongst GLBT in those states where legislative amendments took place, and the same for generalised anxiety disorder. This study, while requiring replication, suggests that it is the process of public debate and the subsequent legislation against same sex marriages that increases the likelihood of alcohol and mental health problems.

Fingerhut & Maisel (2010) examined social recognition as well as legal recognition of gay relationships. They found that social recognition through public ceremony (but not legal recognition) of same-sex marriage was associated with greater relationship satisfaction. Legal recognition was associated with greater relational investments. Both social and legal recognition were protective against minority stress. These results cannot be used to argue for the effects of gay marriage per se, but they highlight the importance of recognition of relationship – whether that be through ceremonies or through law.

Mathy & Lehmann (2004) argue that the results of their study demonstrate that the Defence of Marriage Act (which explicitly proscribes same-sex marriage) "poses a substantial public health risk for lesbians and bisexual women in the USA" (page 192). As Buffie (2011) concludes "…the legal and social recognition of same-sex marriage are likely to impart more than just symbolic support to the gay community. Embracing marriage equality through education and legislation is sound public health policy supported by evidence-based literature" (page 989).

Public opinion support for same sex marriage in Australia has increased in recent years, according to opinion polls. In 2004, around 40% of Australians supported same sex marriage. By 2010, the proportion of respondents supporting this policy had increased to 62%, and the proportion in opposition had decreased (Australian Marriage Equality, 2011).

It would appear, therefore, that measures which reduce the stigma and discrimination against GLBT people, are likely to have powerful public health impacts. Recognition of same-sex marriage is one important area of discrimination. Institutional reform is another important preventative activity. Workplace and institutional policies regarding harassment and discrimination on the basis of sexual preference is an important part of de-stigmatising GLBT and creating a safe environment for GLBT (D'Augelli, 1993; SAMHSA, 2001).

5.2 Treatment interventions

The above section has reviewed the available evidence in relation to prevention – preventing the onset of AOD or MH problems, as well as preventing discrimination and harms. Comprehensive

prevention services should significantly ameliorate the need for treatment interventions, but in reality, prevention efforts only go so far, and people who experience alcohol or drug dependence or mental health problems require treatment interventions. Treatment can be focussed on reducing the harmful behaviour, abstinence and/or recovery. The notion of recovery, currently popular in MH circles and emerging within AOD is concerned with enabling individuals to achieve quality of life. "Recovery is the journey toward a new and valued sense of identity, role and purpose outside the parameters of mental illness; and living well despite limitations resulting from the illness, its treatment and personal and environmental conditions" (Fourth National Mental Health Plan, Priority Area 1: Social Inclusion and Recovery, Commonwealth Department of Health and Ageing; Queensland Government, Acute Mental Health Unit).

While the focus on 'recovery' is important, all treatment should be client-centred and focussed on his or her personal goals. Many people come to AOD treatment not wishing to gain abstinence, but to moderate their consumption to less harmful levels. Likewise, for clients of mental health services, they are seeking relief from symptoms, not necessarily a 'cure'. It is also the case that many people change their behaviour without any formal assistance or 'intervention'. There is an existing literature, not GLBT-specific, which describes the processes of maturation out of problematic alcohol and other drug use, often in association with lifestyle changes and life events, and ageing. Notably, this was described amongst the gay community in New York in the 1980's in association with concerns for the health of the community and a greater focus on looking after themselves and others (Remien, Goetz, Rabkin, Williams, & et al., 1995).

There are many existing treatment guidelines, for both AOD and mental health, that reference best practice evidence-based interventions. These are not specific to GLBT people. The US Substance Abuse and Mental Health Services Administration (SAMHSA) published a treatment guide on substance abuse treatment for GLBT (2001). The guide covers the background and context for GLBT, a summary of the epidemiology, introduces the notion of 'cultural competence' and how that applies to working with GLBT, and identifies special issues such as the importance of confidentiality and non-discrimination. There are then eight specific treatment chapters: the coming out process; families of origin and families of choice; chapters on treatment with lesbians, gay male clients, bisexual people, transgender people and youth; and related health issues. The concluding chapters concern program administration, policies and procedures, training and using networks and alliances (SAMHSA, 2001). This excellent resource document is referred to in this literature review under the relevant sections.

Documentation of the particular and unique issues for GLBT people presenting to either AOD or MH services has been provided in a number of papers. For example Barbara (2003) identified eight themes from qualitative interviews with AOD counsellors. These themes included: openness and disclosure; "coming out"; societal homophobia; internalised homophobia; family and support systems; bars and social life; body image; and HIV/AIDS. Matthews et al. (2006) also identified themes, including shame, boundary issues, importance of role models, attention to issues of sexual orientation within treatment; and the importance of treatment as a safe place. Anderson (1996) notes that AOD treatment programs need to attend to concerns around sexuality, internalised homophobia and dealing with defense mechanisms. From the mental health perspective, Rogers et al. (2002) reviewed mental health needs of lesbian or bisexual women presenting at a GLBT-specific community health service in Boston. The needs identified included relationships concerns, depression, anxiety, suicidality, decreased energy, grief and irritability (Rogers, et al., 2002). Eubanks-Carter et al. (2005) document the unique issues for GLBT seeking psychological services for mental health related issues. These include: experiences of rejection, discrimination and harassment; internalised homophobia; and challenges associated with coming out. This paper, however, also describes the benefits of GLBT including a

discussion about the supportive and empowering GLBT community, resilience; and being more appreciative and loving parents given the substantial legal and biological barriers associated with parenting for GLBT. Specific needs of GLBT methamphetamine users included attention to drug use within the context of sexual behaviour, and safety from homophobic violence (Matheson, et al., 2010), especially given high rates of victimisation amongst GLBT (Hughes, et al., 2010a). Harm reduction services were also identified as important (Matheson, et al., 2010).

For these needs to be adequately met by treatment services, treatment must be accessible and available; treatment may need to be tailored to GLBT issues (and we discuss this at length below regarding GLBT-sensitive versus GLBT-specific services), and treatments should be based on the best available evidence. The section that follows concerns treatment accessibility.

5.3 Treatment seeking and access to treatment

There have been documented barriers to both AOD and MH treatment for many population groups. The extent to which the barriers for GLBT people are different to those for non-GLBT people was explored by Green (2011) in the context of treatment for problem drinking. A number of barriers were noted in her sample: access difficulties, safety concerns, fear of treatment, negative attitudes towards counselling, self-concealment, stigma, fear of social consequences, problem minimisation and lack of motivation to change. Interestingly only one of these factors was significantly different between heterosexual and homosexual respondents: and that was stigma – in the opposite direction from expected. More heterosexual respondents noted stigma as a barrier than homosexual respondents (Green, 2011). This may be explained by a level of resilience developed by GLBT people, given their higher exposure to stigma across many life domains.

Overall, high rates of counselling have been reported in lesbian populations; in the order of 70 to 80% (Bradford, et al., 1994; Rogers, et al., 2002; Sorensen & Roberts, 1997). Merighi et al. (2011) found that of men who have sex with men, those who identified themselves as heterosexual were 60% less likely to access a health care provider than men who had sex with men who identified as homosexual (although they also found drug use in the last 30 days was associated with less regular access to a health care provider). Cronquist et al. (2001) found that for young injecting drug users there was a significantly higher rate of health service utilisation amongst the gay and lesbian young IDU relative to the heterosexual IDU (OR = 3.86). These studies suggest higher rates of treatment utilisation amongst GLBT but do not permit valid comparisons due to the absence of a non-GLBT comparison group. There is a literature which we turn to next, which compares GLBT and non-GLBT treatment utilisation.

In relation to general medical care Bakker et al. (2006) from the Netherlands, reported that gay men were significantly more likely than heterosexual men to access health care (for somatic issues) in the last 12 months (but not significantly more likely over a lifetime). Heck et al. (2006) also reported a significant difference for men – with gay men significantly more likely to have seen a doctor. (Note: the Heck study defined GL as living with same sex partner). For women, the Bakker et al. (2006) study found no significant difference between lesbian/bisexual women and heterosexual women in relation to accessing health services. Heck et al. (2006) also found that lesbian women were significantly less likely to have seen a doctor or to have a usual source of general healthcare than heterosexual women. Bowen et al. (2005) found a non-significant result for lesbian compared to heterosexual women in seeing a medical practitioner in the last year. These studies regarding general medical care highlight the importance of gender differences in understanding healthcare utilisation.

More specific to our area of interest – AOD treatment – a number of studies have found that gay/bisexual men, relative to heterosexual men are not significantly more likely to access AOD treatment. For example Cochran et al. (2000) found that 6% of GB men compared to 3% of heterosexual men had sought AOD treatment in the past year (not statistically significant). Cochran and Mays (2000b) reported a similar heightened rate for GB men but not statistically significant. Likewise Drabble et al. (2005) found no significant difference for GB men compared to heterosexual men regarding whether they had ever sought help for an AOD problem. Finally, Grella et al. (2009) who controlled for predisposing, enabling and need-related factors associated with help seeking, found non-significant difference between gay and heterosexual men with AOD disorders in rates of access to AOD treatment (but the odds of seeking treatment for gay men were higher).

For women and AOD treatment, there seems to be a different story – Cochran et al. (2000) found a significantly greater rate of AOD treatment for lesbian women compared to heterosexual women (OR=3.74). They conclude that the "overrepresentation (of lesbian women) among women in treatment has important implications for delivery of care" (page 1068). Drabble et al. (2005) found that the rate of help seeking for alcohol problems was significantly higher among lesbian women than heterosexual women (adjusting for the differential rate of underlying disorder). Hughes et al. (2003) found lesbians (matched to a heterosexual sample) were significantly more likely to have been in treatment for alcohol use disorders (18% compared to 2%). Cochran and Mays (2000b) found elevated rates for lesbian and bisexual women but they were not statistically significant. The only study not to find the significant difference for lesbian women in relation to AOD treatment was Grella et al. (2009) – the difference between lesbian (50% had sought treatment) and heterosexual women (40% had sought treatment) was not statistically significant.

Turning now to MH treatment amongst gay men relative to heterosexual men, Bakker et al. (2006) reported a significant difference between gay and heterosexual men in use of MH services (with gay men using them significantly more frequently). Likewise, Cochran et al. (2000) found significantly higher MH treatment utilisation amongst gay and bisexual men compared to heterosexual men. This difference persisted despite adjustment for rate of underlying MH disorder, demographic characteristics and health insurance status. Finally, Grella et al. (2009) also found significantly higher rates of MH treatment amongst gay and bisexual men relative to heterosexual men, after taking into account predisposing, enabling and need-related factors.

For women and MH treatment, Hughes et al. (2000) found that 78% of lesbian women had received counselling/therapy for an emotional or mental health problem, compared to 56% of heterosexual women in their sample (significantly different). Cochran et al. (2003) also report significantly higher rates of mental health treatment amongst lesbian/bisexual women compared to heterosexual women (adjusted for demographic, health insurance status and presence of diagnosis), as do Cochran and Mays (2000b). Grella et al. (2009) also find significantly higher rates of MH treatment amongst lesbian/bisexual women compared to heterosexual women.

In considering the import of all the above literature, it is important to remember that a number of the studies come from the USA, where health insurance status is a significant determinant of access to health care. Many of the studies, however, have controlled for that variable in the analyses. Likewise, there are predisposing and enabling factors in relation to treatment utilisation – a number of the studies above have accommodated those variables in their analyses. Given the differences in underlying prevalence (either for MH or AOD) rates of diagnoses need to be taken into consideration in conducting such analyses. This has been done in a number of the studies cited above. Finally, it is essential to remember that treatment utilisation does not equate

to treatment satisfaction or positive outcomes; all that is being examined here is the rate of treatment access, not whether the treatments meet people's needs or produce positive outcomes.

In summary, then, we seem to have a pattern in the literature suggestive that for AOD treatment, there are no significant differences for men on AOD treatment utilisation, but for lesbian women, a significantly higher rate of AOD treatment utilisation relative to heterosexual women. In relation to MH treatment utilisation, both gay men and lesbian women appear to have significantly higher rates of treatment utilisation.

Is this pattern of treatment utilisation replicated in Australian data? Ideally this hypothesis would be tested with matched samples. In the absence of such work, we have used existing datasets – which are limited due to small sample sizes. With this caveat in mind, we explore rates of treatment seeking for AOD problems, followed by MH problems.

Treatment utilisation for alcohol and other drugs

Using the NDSHS[19], the below table shows the rate of alcohol and drug treatment access for same-sex attracted men and women compared to rates of treatment access for non-same sex attracted men and women. As can be seen, the percentage which access treatment is higher in the GLBT populations: significantly higher for SSA men and SSA women across both alcohol and other drugs.

Table 17: NDSHS, Weighted prevalence estimates of lifetime treatment attendance, SSA and Non-SSA by sex (Roxburgh, Howard and Degenhardt, in prep)

	Men		Women	
	SSA	Non-SSA	SSA	Non-SSA
Ever attended for alcohol treatment	7.9%*	2.0%	4.3%*	0.7%
Ever attended for other drug treatment	10.8%*	3.4%	12.6%*	2.6%

Notes: All estimates are age adjusted
* Difference is statistically significant

However, this analysis does not adjust for the different underlying prevalence rates. The higher rate of treatment access may simply be a function of higher rates of problematic substance use in the GLBT population. In order to examine this, we compared the proportions attending treatment taking into consideration the underlying rate of problematic use. There is no direct measure of alcohol use disorder in the NDSHS, therefore we had to establish a proxy measure of 'problematic use', which was engaging in risky drinking on a weekly basis. This proxy measure was applied to both the SSA and non-SSA groups equally, so any effect of choice of proxy measure would equally affect both groups. Table 18 provides the workings for the analysis, with the final row providing the proportion of problematic drinkers (as defined by weekly risky drinking) relative to treatment attendance.

[19] A limitation of the NDSHS sample which responded to questions about alcohol and drug use is that they were interviewed via telephone (CATI), whereas the treatment related questions were administered only in the drop-and-collect method. Given that both the GLBT and non-GLBT samples had the same method applied (CATI and drop-and-collect) it does not invalidate the analyses.

Table 18: Calculations of treatment access rate for alcohol relative to prevalence of problematic use (Note: small sample sizes)

	Men		Women	
	SSA	NON-SSA	SSA	NON-SSA
Risky drinking weekly in last year # in sample[1]	29	814	39	672
Attended for alcohol treatment (ever) # in sample	11	155	10	69
Treatment access rate (proportion of those with problem who sought treatment)	38%	19%	26%	10%

Notes
[1] Proxy for alcohol problems = risky drinking at least weekly

Caution must be exercised in interpreting these results, due to the small sample sizes, and the proxy measure. Nonetheless, the two tables together suggest that for alcohol, both male and female GLBT access treatment at a greater rate than non-GLBT. This is consistent with the international findings for women.

For illicit drugs, the analysis follows the same method. A proxy measure of drug use disorder was established from the NDSHS – which was illicit drug use in the last year. While this is a less than ideal measure, the same proxy was applied to both the GLBT and non-GLBT groups, so any over-estimation applies equally to both GLBT and non-GLBT calculations (that is, the two groups are compared on the identical measure). We were interested only in the comparison between the treatment access rate, rather than the absolute number per se.

Table 19: Calculations of the treatment access rate for illicit drugs relative to prevalence (Note: small sample sizes)

	Men		Women	
	SSA	NON-SSA	SSA	NON-SSA
past 12/12 illicit drug use[1] # in sample	92	1238	88	1161
attended for drug treatment (ever) # in sample	18	257	25	266
Treatment access rate (proportion of those with problem who sought treatment)	20%	21%	28%	23%

Notes
[1] Proxy for drug problems = illicit drug use in last 12 months

The results differ from those for alcohol. While on the surface the rate of attending treatment was significantly higher for SSA (see Table 17 - both men and women: 10.8% vs. 3.4% and 12.6% vs. 2.6% men and women respectively), that difference largely disappears when adjusted by the underlying prevalence rate of illicit drug use. Twenty percent of SSA men with illicit drugs use in the last year sought drug treatment; compared to 21% of non SSA men with illicit drug use who sought treatment. That is, there is little difference for men in treatment seeking rate. For women, there is a slightly higher rate of drug treatment access for SSA women (28%) compared to non SSA women (23%) when the underlying rate of use is accommodated.

The National Survey of Mental Health and Wellbeing provides an alternate dataset to examine alcohol and other drug treatment access amongst GLBT compared to non-GLBT samples. As with the NDSHS, small sample sizes mean that the analyses can be indicative only, and further research using more appropriate methods is required to fully assess the question regarding treatment access. Furthermore, the NSMHWB treatment access questions do not distinguish between alcohol treatment or drug treatment. The sampling frame and survey method for the NSMHWB is different from the NDSHS (and described elsewhere in this report – Page 20). Only those respondents who met diagnostic criteria for substance use disorder were asked about treatment attendance. This means that the rates in the NSMHWB already take into account the underlying prevalence of the disorder. The results appear below.

Table 20: Treatment access, alcohol and other drug use disorders (lifetime and past year), NSMHWB data

	Homosexual/ bisexual	Heterosexual	N, significance testing
Talked to a medical doctor or other professional about your use of alcohol/drugs (and lifetime SUD)	29% (n=25)	20% (n=384)	N=2042 Chi square NS
Talked to a medical doctor or other professional about your use of alcohol/drugs (and past year SUD)	33% (n=9)	32% (n=120)	N=417 Chi-square NS
Received professional treatment for episodes of alcohol or drugs in part 12 months (and lifetime SUD)	15.5% (n=5)	13.9% (n=61)	N=409 Chi square NS
Received professional treatment for episodes of alcohol or drugs in part 12 months (and past year SUD)	53.8% (n=5)	29% (n=39)	N=129 Chi square NS

The NSMHWB results seem to accord with the NDSHS results in as much as there appears to be a higher treatment access rate for GLBT but the difference is not statistically significant. The result for men is not surprising – the international literature does not find significantly higher AOD treatment utilisation for gay/bisexual men compared to heterosexual men – as with our findings.

Treatment utilisation for mental health problems

We also sought Australian data to examine whether the international findings regarding higher treatment access for GLBT with MH problems was also detected in Australian data. The NSMHWB was again used, which (as noted above) already accommodates any underlying prevalence difference between GLBT and non-GLBT which could account for differences in treatment rates (need-related factor). The analyses were separated by anxiety disorder, affective disorder and any mental health disorder, and treatment defined as 'seeking' treatment – note that this is not necessarily the same as having received treatment. Table 21 displays the results.

Table 21: Mental health disorders (past year and lifetime) and treatment seeking in the past year (by homosexual/heterosexual), NSMHWB data

	Homosexual/ bisexual	Heterosexual	N; Significance testing
Anxiety disorder (past year) and sought treatment in past year	56% (n=26)	46% (n=358)	N=770 Chi square NS
Anxiety disorder (lifetime) and sought treatment in past year	51% (n=33)	38% (n=465)	N=1203 Chi square NS
Affective disorder (past year) and sought treatment in past year	73% (n=24)	66% (n=294)	N=479 Chi square NS
Affective disorder (lifetime) and sought treatment in past year	54% (n=27)	42% (n=442)	N=1105 Chi square NS
Mental health disorder (past year) and sought treatment for mental health disorder (past year)	56% (n=33)	49% (n=549)	N=1111 Chi square NS
Mental health disorder (lifetime) and sought treatment for mental health disorder (past year)	46% (n=41)	36% (n=737)	N=1986 Chi square NS

All are statistically non-significant, but in each case the rate of treatment seeking (anxiety, affective and mental health disorders combined) is higher in the homosexual/bisexual group than in the heterosexual group. This is not in accord with the international literature, which in the main finds statistically significant higher rates of treatment utilisation for mental health in both male (gay) and female (lesbian) samples relative to heterosexuals. The lack of statistical significance is likely due to the small sample sizes.

Conclusions regarding treatment seeking and treatment access

New Australian research is required to fully test the hypotheses regarding treatment utilisation rates across AOD and MH for GLBT. The tentative conclusions we can draw from these preliminary analyses of Australian datasets are that:

- GLBT people appear to access treatment for alcohol problems at a higher rate, even when the higher rate of problem prevalence is accounted for.
- This is consistent with international research on lesbian/bisexual women.
- For illicit drugs we found little difference in treatment access rate for GLBT and non GLBT men with drug problems, that is male GLBT clients access drug treatment at a similar rate to their non-GLBT counterparts; this is also consistent with international literature.
- More female GLBT drug users access drug treatment (28%) relative to non GLBT drug using females (23%), consistent with international literature.
- For MH services, we found no statistically significant differences in rates of treatment seeking, although the data indicate a trend towards higher MH treatment seeking amongst GLBT groups. International literature shows that MH treatment utilisation is significantly higher amongst GLBT than heterosexual people.

There are a number of reasons as to why GLBT may have higher treatment utilisation rates. It is not because they experience more problems – as, in the main, the studies control for those variables. It is possible that GLBT people experience a greater number of stressful, precipitating

events that lead them more readily into mental health or AOD treatment. However, we suspect that the factors for higher treatment utilisation may have more to do with the GLBT community. It seems likely that the community norms around help-seeking within the GLBT community are strong. With good social networks and positive norms around help-seeking, a greater number of GLBT people may feel comfortable and supported in seeking health care. Another factor may relate to beliefs about health – a greater sense of the importance of health and well-being. Finally, as alluded to earlier, there is stigma associated with accessing either MH or AOD services – and GLBT people are enormously resilient to stigma – having 'put up with it' across many aspects of their lives. This resilience to stigma may enable them to access treatment at a greater rate than heterosexual people.

The implications of this are obvious – all MH and AOD services should expect to see GLBT people within their services. This is a compelling argument for ensuring that services receive appropriate training and are well placed to provide care to this population group. This is a population group that is aware and willing to seek treatment – this represents a significant opportunity and places services in an excellent position to provide effective treatments. At the same time, while GLBT people may attend more readily, none of this suggests that they are satisfied with the services they receive, that their needs are being met or that they experience positive outcomes. We turn to the outcome literature next.

5.4 Types of services: GLBT-sensitive and GLBT-specific

For the purposes of this literature review, and in order to make sense of the vast literature, we have derived two categories of GLBT services – GLBT-sensitive and GLBT-specific: respectively, those that are sensitive to GLBT needs while offering services to the entire population of AOD or MH clients; and those that are specially tailored (GLBT-specific). These terms can refer to particular interventions (eg six-week CBT program that is GLBT-specific or GLBT-sensitive) and also refer to agencies that provide an array of interventions (again, with some agencies being GLBT-specific and some being GLBT-sensitive). We have classified the existing research literature as being either GLBT-specific or GLBT-sensitive based on our own assessment of the papers (these terms are not found in the existing literature, but we believe they offer a useful way of understanding types of interventions and services for GLBT people).

Interestingly in a USA survey (Cochran, Peavy, & Robohm, 2007a), 11.8% of all AOD services listed in the SAMHSA database specified that they offered GLBT services. Upon further investigation by the authors, it turned out that 71% of these services that had self-nominated as GLBT, "were no different from services offered to the general population" (page 161). This suggests that while AOD services may think that they offer GLBT services, in fact they may not. It also highlights the challenge of GLBT-sensitive versus GLBT-specific services: being clear about the difference between these service types is important for understanding GLBT interventions.

GLBT-sensitive services

Much of the GLBT literature takes as its starting point that AOD and MH services need to be inclusive and non-homophobic. The marginalisation of GLBT in the community and documented homophobic attitudes by practitioners in both MH and AOD services are fundamental reasons for all services to be GLBT-sensitive. It is likely that GLBT clients have at some point experienced "unfriendly" treatment, given the results of a NZ survey of lesbians which demonstrated that 30% of their respondents had had 'unfriendly' MH service reception at some point in the past (Welch, et al., 2000). Travers & Schneider (1996) provide some appalling

examples of discrimination and abuse experienced by young GLBT people in AOD treatment in Canada. Eliason (2000) found that about one third of the AOD counsellors surveyed in Iowa had negative or ambivalent attitudes towards GLBT. Social workers demonstrated homophobic attitudes (Berkman & Zinberg, 1997). Homophobia amongst the medical profession has also been documented (Saunders, 2001) (incidentally also discrimination against lesbian researchers: Bradford, Ryan, Honnold, & Rothblum, 2001).

The other reason for arguing for GLBT-sensitive services is based on the presumption that GLBT clients in AOD or MH respond better when the service/agency/practitioner is aware of and sensitive to GLBT issues. Matthews et al. (2006) in a qualitative study of 10 GL people's experiences of AOD services, found mixed views regarding the importance of attending to sexual orientation to the AOD treatment. Senreich (2010b) found that levels of honesty and openness about sexuality were associated with greater client satisfaction with treatment and program completion but, importantly, not associated with improved treatment outcomes. In a NZ study 50 heterosexual and 50 homosexual clients from a diverse range of AOD services were interviewed about the relevance and influence of their sexual orientation. They found that less than half of the homosexual clients who had disclosed their sexual orientation thought that it had been incorporated into their treatment plan (MacEwan, 1994). Australian research (Matheson, et al., 2010) noted that the vast majority of GLBT methamphetamine users felt comfortable being asked about their sexuality in a treatment setting. Travers & Schneider (1996) noted the importance of appreciating sexuality (as also noted by authors such as Shoptaw and others) but they also found that some young GLBT people reported an "inordinate amount of attention" given to sexuality (page 366) that was perceived to be harassment or discriminatory. Interestingly in discussions at an ACON forum held earlier this year about experiences of AOD treatment in Sydney, sexuality was not something considered important by some treatment clients. These various studies seem to suggest that attention to sexuality issues is not a pre-requisite for successful treatment outcomes. This finding conforms to the idea that both AOD and MH problems can respond to interventions without necessarily seeking to redress 'underlying issues'. At the same time, there is a belief that without attention to 'underlying issues' relapse (to AOD or MH symptoms) is more likely. We did not source any literature that directly addresses this, with the exception of one single case study. The case study of social anxiety in a gay male reported the effective use of CBT which reduced anxiety symptoms, but was noteworthy in that once the therapy shifted to focus on sexual identity (resulting in adoption of a gay lifestyle) the anxiety systems resolved more quickly (Walsh & Hope, 2010).

Treatment studies have found no difference in barriers to treatment, presenting problems, or treatment outcomes between GLBT and non-GLBT clients in treatment. For example, Green (2009) in a web-based survey of problem drinkers noted that "though several sex differences and sexual orientation differences were found in reported rates of substance use, the groups (gay, lesbian and bisexual vs. heterosexual) appeared more similar than different in terms of motivation for treatment, barriers to treatment seeking, and treatment preferences" (page ii). Australian research on GLBT methamphetamine users found barriers to treatment largely concerned practical issues and accessibility (eg opening hours, waiting lists) (Matheson, et al., 2010). These barriers are not specific to GLBT issues. Sorensen and Roberts (1997) in a national US survey of lesbian women found that the reasons for presenting for MH counselling did not differ substantially from those of the general population (predominantly depression and relationship issues).

All the above evidence suggests that there may be little difference between GLBT and heterosexual people in barriers to treatment.

There are many papers that note that GLBT clients require the same kinds of interventions as non-GLBT clients (Bernhard & Applegate, 1999; Coker, Austin, & Schuster, 2010; Covey, Weissman, LoDuca, & Duan, 2009; Grafsky, Letcher, Slesnick, & Serovich, 2011; Green, 2009; SAMHSA, 2001). In terms of adolescent development, the similarities between gay and non-gay youth in terms of developmental challenges have been noted (Savin-Williams, 2001b). As Eccles et al. (2003) concludes "practitioners should not assume damaging psychological distress as an inevitable part of the developmental process for gay youth" (page 138). Wong et al. (2008) in a study of cognitive behavioural interventions and case management with people who were HIV+ and had substance use disorders found that the intervention (to reduce substance use) worked equally well for gay men and heterosexual men (and women). Grella et al. (1997) examined retention in methadone maintenance treatment at 3, 12 and 24 months. The variables which predicted treatment drop-out included younger age, cocaine and alcohol use, and depression. Being gay/bisexual (males) was not predictive of treatment dropout from methadone maintenance at any of the time-points. These studies, along with others such as Grafsky et al. (2011) suggests that GLBT people respond to treatment in the same way as non-GLBT even when that treatment is not specifically tailored.

Where does this leave us? Some particular treatment needs have been noted, but on the whole the literature suggests that GLBT people respond in the same ways as non-GLBT to treatment interventions; that addressing sexual identity issues may be important for some individuals but is not a prerequisite of all treatment; and that barriers to treatment are not likely to be different between GLBT and non-GLBT individuals. Fundamentally it comes back to providing accessible services for GLBT which means not experiencing homophobia, discrimination or judgemental attitudes.

Features of GLBT-sensitive services

There is a body of work detailing GLBT-sensitive service features, sometimes referred to as "culturally appropriate" or culturally competent services (SAMHSA, 2001). Johnson & Johnson (2000) provide a list of 15 requirements for practitioners to be aware of. These include the way in which language is used (partner versus girlfriend/boyfriend); practitioners knowing their own attitudes/beliefs; and knowledge about GLBT support services. Matthews et al. (2006) also provide a checklist, which includes counsellor self-awareness, acceptance and affirmative approach, and engagement of family and significant others. In the SAMHSA treatment guide, the importance of a non-judgemental, respectful attitude by clinicians is highlighted. An openness and willingness to cultural difference plus an awareness of cultural and value differences are essential, along with capacity for self-reflection (SAMHSA, 2001).

The minimum required is a welcoming and respectful environment (Coker et al., 2010). Sensitivity and empathy are essential (Matheson, et al., 2010). Therapists need to hold a 'gay-affirming attitude' (Israel, Gorcheva, Walther, Sulzner, & Cohen, 2008). Some authors have argued that positive discrimination is required, and that 'affirmative' services are a step beyond 'sensitive' services. For example, D'Augelli (1993) argued that MH services at universities must be more than GLBT-sensitive, rather they need to be GLBT "affirmative" – taking the initiative to engage with the GLBT community on campus to assist with mental health issues (see also Cheng, 2003 on affirmative action). Of significant concern is confidentiality: ensuring that services maintain a high regard for confidential personal information (Allen, Glicken, Beach, & Naylor, 1998; Cheng, 2003; SAMHSA, 2001).

There are a number of descriptive papers in the literature which aim to educate professionals about themes and issues in working with GLBT people (see Morrow, 1993 on social workers;

Harbeck, 1993 on teachers; Coleman & Remafedi, 1989 on counsellors; Saltman, Newman, Mao, Kippax, & Kidd, 2008 on GP's in relation specifically to crystal methamphetamine use in gay men; Eubanks-Carter, et al., 2005 for psychologists). Given that, like the rest of the population, most GLBT people seeking assistance with either AOD or MH concerns are likely to present to a general medical practitioner in the first instance, it is critical that GP's are capable of providing supportive, nonjudgmental and empathic services to GLBT individuals.

Appropriate and available training and support for the AOD and MH workforces is essential in achieving GLBT-sensitive services. In a survey of mainstream alcohol treatment providers in New York in the late 1980's, the authors concluded that training in treating GLBT individuals was "inadequate", with an absence of specific skills (Hellman, Stanton, Lee, & Tytun, 1989). This was despite 77% of respondents noting that GLB people had unique needs. Many other papers highlight the need for better workforce education and training (eg Barbara & Chaim, 2004; Berkman & Zinberg, 1997; D'Augelli, 1993; Eliason, 2000; Eliason & Hughes, 2004; Eubanks-Carter, et al., 2005; Fontaine & Hammond, 1996; Greene, 1994; Hellman, et al., 1989; Johnson & Johnson, 2000; Matheson, et al., 2010; Matthews, et al., 2006; Ryan, Bradford, & Honnold, 1999; SAMHSA, 2001; Travers & Schneider, 1996; Welch, et al., 2000; Zigrang, 1982).

Treatment outcome studies on GLBT-sensitive services

The majority of the published literature which describes treatment outcomes (either MH outcomes or AOD outcomes) has concerned interventions with people who are HIV positive and gay. While we do not cover the HIV positive literature here, some examples of relevant treatment outcome studies that specifically mention gay men are worth noting. For example McElhiney et al., (2009) conducted a pilot study of combined modafinil plus CBT for HIV positive gay methamphetamine users. In this brief report (it was a pilot study), the authors noted in the Discussion that "it is essential that the therapist was comfortable discussing gay male sexual practices" (page 36). Lee et al. (1999) describes a group-based cognitive behavioural therapy program for gay men (HIV positive) with Major Depression or Dysthymia. The sample (n=15) were retained in therapy, and depression decreased over the one–year follow-up. While the authors discuss the need to tailor the CBT program to the specific needs of HIV positive gay men, there is little detail in the paper (with the exception of comments regarding important therapeutic themes such as anger, guilt and fear of dying). In a better designed study, Lutgendorf et al. (1997) conducted a randomised controlled trial of a ten-week group CBT with stress management (relaxation) with HIV positive gay men. They found significant post-intervention decreases in depression, anxiety and overall distress, amongst the 40 participants. Again, it did not appear that the CBT stress management was specifically tailored to gay issues. Other forms of intervention, such as time limited dynamic psychotherapy have been demonstrated to be effective in reducing distress amongst HIV positive men who have sex with men (Pobuda, Crothers, Goldblum, Dilley, & Koopman, 2008). Without details on whether the intervention was tailored to be GLBT sensitive, and the absence of control groups make these results difficult to interpret confidently. In addition, the focus was on HIV positive status as the precipitant to high levels of distress, rather than underlying mental health or AOD problems.

Turning to other treatment outcome literature on GLBT-sensitive services, CBT was nominated by psychotherapists as one of the helpful therapeutic approaches when working with GLBT clients (Israel, et al., 2008). Safren et al (2001) describe how standard CBT can be modified to take into account GLBT issues, including the case formulation and functional analysis used within CBT. They provide case examples for depression and anxiety (Safren, et al., 2001). We found evidence for effectiveness of the Community Reinforcement Approach (CRA) for GLB youth living on the streets (Grafsky, et al., 2011). Twelve sessions of CRA, along with HIV

education resulted in reductions in drug use and improvements in mental health for GLBT clients. The study shows that CRA is an effective intervention for GLBT street-youth (Grafsky, et al. 2011).

Satterfield & Crabb (2010) highlight the emerging concerns regarding aging/elderly GLBT people and depression. They describe a cognitive-behavioural intervention for depression tailored for an older gay male. (This paper also describes the treatment adaptation strategies for working with GLBT clients, including acknowledgement, normalisation, recognition of broad definition of family, stress management and so on).

Morgenstern et al. (2007) compared 4 sessions of Motivational Interviewing (MI) with MI plus CBT (12 sessions) and a non-help seeking control group, all of whom were MSM but importantly were also alcohol-dependent, rather than merely excessive alcohol consumers. Another key feature of this study was that clients could elect a 'moderation' rather than abstinence goal. This is consistent with Australia's treatment approaches where abstinence is not the only acceptable treatment outcome. They reported positive within-treatment outcomes for MI alone, over and above the MI + CBT but these were not differentially sustained after treatment; indeed all three groups significantly reduced their drinking over the 12 month follow-up. They conclude that their findings suggest that "brief MI for alcohol-dependent populations with co-occurring problems who are contemplating moderation but not abstinence can lead to clinically meaningful and sustained reductions in drinking" (page 82). This study did not especially tailor the MI or CBT to GLBT-specific issues (the interventions were derived from the manualised Project MATCH approach).

We sourced two papers describing psychotherapy and psychoanalysis – both case studies (Ruiz, Lile, & Matorin, 2002; Shechter, 1992). These were regarded as potential examples of GLBT-sensitive services because they were highly likely to be tailored to the individual client's needs.

Finally, GLBT-sensitive services need to form alliances with the GLBT community and the variety of specialist social and health services offered to GLBT people through specialist services. Without such alliances between AOD or MH treatment providers and the GLBT community, it is likely that additional community support will not be as readily accessible to individual clients. Indeed, MacEwan (1994) suggests that GLBT-specific services may not be required during the AOD treatment per se, but more particularly in the pre-treatment/assessment phase and in the aftercare and follow-up phase. Organisations such as ACON, the Gay and Lesbian Counselling Service of NSW and The Gender Centre are essential is supporting AOD and MH services and providing a referral network where required to assist GLBT clients when they are seeking specialised/tailored interventions. The SAMHSA guide (2001) describes the processes and steps involved in alliance building between AOD treatment providers and the GLBT community (see also ACON booklet: "Building and maintaining a GLBT affirmative service").

In relation to NSW, there is no definitive list of which services regard themselves, or are regarded by others as GLBT-sensitive. It is hoped that all AOD and MH services in NSW are GLBT-sensitive, as this is a minimum requirement. (See Appendix A, discussed later, which provides a list of GLBT-specific services in NSW, but which also includes some GLBT-sensitive services).

ACON have developed a training booklet for AOD services which describes how to build and maintain a GLB affirmative service (ACON, 2010). The booklet is provided in conjunction with training workshops. AOD staff need to be aware of specific GLBT issues, actively demonstrate

that understanding through policies, procedures, language and environment; not make assumptions about sexual identity, and validate the client's experiences. In simple ways, such as material in the waiting area of an AOD service, providers can demonstrate a gay-friendly approach. A voluntary code of practice for AOD agencies is provided which outlines a set of principles which services agree to and demonstrates that the agency provides GLBT affirmative services (ACON, 2010).

In summary, every AOD and MH service needs to be GLBT-sensitive. It is not practical or feasible to establish accessible GLBT-specific services for every GLBT client (see Anderson, 1996; Hellman, et al., 1989; Senreich, 2010a and Anderson, 1996 for discussion on this). For example, in Leeds in the UK, only one of seven agencies had offered a GLBT support group which was discontinued due to low client numbers (Noret & Rivers, 2003). In this context it is even more important that every service be GLBT-sensitive.

GLBT-specific services

GLBT-specific services have been culturally tailored to address the unique needs of the GLBT population. Cultural adaptation of interventions has been described in relation to many minority groups (ethnicity, sexual preference, culture). Documentation of the ways in which existing interventions are changed and shaped to be culturally appropriate have been described (eg (Satterfield & Crabb, 2010; Shoptaw et al., 2005). Cultural adaptation attends to the beliefs, norms and context for the minority group, applies relevant examples and materials that are concordant with the group's norms and values, and attends to specific variables (such as sexual behaviour in this case) as it pertains to the intervention being adapted.

There are a number of historical factors that have contributed to the development of GLBT-specific services. For example in the 1980's it was noted that GLBT clients who had sought services from traditional alcoholism services found that they were (perhaps covertly) identified as needing treatment for their homosexuality (Cheng, 2003; Driscoll, 1982). From a mental health perspective, psychologists have previously regarded homosexuality as a disorder (Drescher, 2002; Eubanks-Carter, et al. 2005) for discussion of this issue). It is likely that this context was a central catalyst for the establishment of GLBT-specific services. Ongoing concerns about discrimination and homophobic attitudes of AOD and MH providers (Plummer, 1995) are potent arguments for the need for GLBT-specific services.

In relation to AOD interventions, it has been argued that the strong association between sexual behaviours and drug use, and use of substances to cope with marginalisation and stigma mean that substance use treatment requires explicit discussions and attention to the relationship between sexual behaviour, sexual orientation and drug use (Senreich, 2010a). This occurs more readily in a GLBT-specific setting. Paul et al. (1996) argue that GLBT specific services are required because there are culturally specific determinants of problematic drug use (such as sexual behaviour); non-specific services may lack understanding of the unique GLBT issues; and a holistic approach that includes honesty from the client (including in relation to his/her sexuality) is required. Senreich (2010b) found higher levels of honesty about sexual orientation in GLBT-specific services – an argument for the importance of GLBT-specific services (but note this was not associated with better outcomes). Australian research (Matheson, et al., 2010) has shown that most (78%) of GLBT methamphetamine users identified specific treatment needs, again arguing for the availability of GLBT-specific services.

There are both strengths and limitations to GLBT-specific services. The advantages include being able to directly address issues around sexuality, and the various other needs identified at

the start of this chapter for GLBT clients. In addition, GLBT-specific services can offer a support network, enhance social relationships and provide positive role models (eg Anderson, 1996). On the other hand, there are practical issues associated with providing GLBT-specific services – they may not be able to provide the full range of specialist AOD or MH services; they may reinforce the isolation and 'difference' of GLBT (perpetuate the differences, Anderson, 1996). They also by default work against GLBT-sensitive services and obviate the need for the entire AOD and MH workforces to address sexuality issues, discrimination, homophobia and so on. A further complication is that some services may provide GLBT-specific services, but not necessarily advertise their services as such. As noted by ACON staff, some services deal well with sexuality issues but have reasons not to advertise their services as GLBT-specific. For example, youth services like Headspace explicitly welcome people of all sexualities on their website, but their lack of targeted services may have more to do with the fact that some young people do not clearly identify with a particular sexuality. Similarly, the Service Assisting Male Survivors of Sexual Assault does not advertise itself as gay friendly, because this could aggravate anxieties that some of their clients may have around their sexuality after they have been sexually assaulted.

Features of GLBT-specific services

A number of papers describe GLBT-specific services that have been tailored to meet the needs of GLBT clients. (These papers for Mental Health include: Ball, 1994; Bridget & Lucille, 1996; Rogers, 2002. For AOD include: Driscoll, 1982; Fals-Stewart, O'Farrell, & Lam, 2009; Lee, et al., 1999; Paul, et al., 1996; Pobuda, et al., 2008; Ratner, 1988). Noting the above historical context, it is not surprising that a number of now dated papers describe in some detail GLBT-specific services. For example Ratner (1988) describes a largely 12-Step focussed model (Pride Institute) with the following GLBT-specific features: positive and affirmative environment that acknowledges the GLBT lifestyle; a focus on self-acceptance and self-awareness; strategies for coping with stigma, discrimination, stress; affirming the non-traditional "family" network, integration of sexuality into the treatment; and the presence of GLBT role models. There have been no formal independent evaluations of the Pride Institute program. Driscoll (1982) described the "Homophile Alcoholism Treatment Service" – a service for gay alcohol dependent people (both men and women) in the USA.

A number of features of GLBT-specific services have been noted but the most commonly referred to is the presence of gay or lesbian staff (for example Johnson & Johnson, 2000; Paul, et al., 1996; Shoptaw & Frosch, 2000). The issue of whether GLBT clients prefer GLBT clinicians has been previously studied. In relation to mental health counsellors, Hughes et al. (2000) found that lesbian women preferred lesbian counsellors (79%). Sorensen & Roberts (1997) found higher MH treatment satisfaction for lesbian women with a homosexual counsellor than a heterosexual counsellor. Green (2011) found that slightly more than half of the GLBT respondents in her problem-drinking study stated a preference for a GLBT clinician (Green, 2011). In relation to smoking cessation programs, gay men expressed a strong preference that the clinician be gay (Schwappach, 2009). In a survey of MH clinicians, Ryan et al. (1999) concluded that lesbian counsellors understood the nature of lesbian lives better and provided more informed interventions. Gay and lesbian respondents in Gambrill et al's (1984) survey regarding use of MH and social services reported difficulties in using heterosexual counsellors. Given the workforce issues noted earlier, it is not surprising that GLBT counsellors are perceived to be superior when working with GLBT clients.

Treatment outcome studies: GLBT-specific

Paul et al. (1996) described one year outcomes from a San Francisco gay-specific program, where most clinicians are gay, and the model is largely 12 Step, along with a coping skills group based program and outreach services. They found a "marked reduction" in drug use during the first three months of treatment, which subsequently stabilised. There was no comparison with non-GLBT clients, nor with non-GLBT specific services but the authors call for the need for such comparative efficacy research, including randomised trials (Paul, et al., 1996).

The involvement of partners, families and 'significant others' in both mental health and AOD treatment is known to enhance outcomes (Senreich, 2010c). The same is true for GLBT people and requires attention by the services to GLBT partners, family, and friends and their engagement with the treatment (eg: Glaus, 1989; MacEwan, 1994; Ratner, 1988; SAMHSA, 2001). MacEwan (1994) found disturbing differences in the rate of engagement of significant others. Forty percent of the heterosexual females and 20% of the heterosexual males had had their significant other invited to be involved in their treatment. This contrasted with only 8% of lesbian and 4% of gay men (MacEwan, 1994). This finding is in contrast to Senreich (2010c) who found no differences between GLBT and heterosexual clients in the rate of invitation of significant others to participant in treatment.

Relationships are perceived to be a potential area of stress for GLBT people and a potential precipitant to harmful AOD use or mental health problems (but are also a protective factor). Therefore there is good logic to suggest that interventions which focus on relationship issues would be beneficial. Fals-Stewart et al (2009) conducted a trial of behavioural couples therapy with gay (n=52) and lesbian (n=48) couples, of which one had an identified alcohol use disorder. Randomised between the behavioural couples therapy and an individual behaviour therapy control, the researchers found that GLBT people receiving the couples interventions had better outcomes at one year (reduced number of days heavy drinking). These results replicated those for heterosexual couples, demonstrating that this form of treatment works equally well for GLBT. (Note: the therapists were gay/lesbian – hence our classification of this study as GLBT-specific. There were no outcome differences between the gay couples and lesbian couples).

Evidence which supports the effectiveness of CBT interventions for GLBT methamphetamine users has been reported. Peck et al., (2005) studied the extent of reduction in concurrent depression in methamphetamine dependent gay men. Participants (N=162) were randomised to one of four interventions (CBT, CM, CBT+CM, gay-specific CBT which focussed on HIV risk behaviour). All four treatment groups resulted in reductions in methamphetamine use over the course of one year. There were no treatment group differences in reductions in depression – all sustained reductions in depressive symptoms to the six month time-point (with CBT having higher depression scores at one year follow-up, but may be accounted for by baseline differences in depression severity). This study demonstrates the efficacy of cognitive-behavioural interventions for gay and bisexual methamphetamine dependent men.

The extent to which superior outcomes from GLBT-specific interventions over and above existing effective interventions (such as CBT and CM) was reported by Jaffe et al (2007). They examined the effectiveness of CBT in a population of gay methamphetamine dependent men (n=145). The focus of the study was on the extent to which methamphetamine treatment reduces depression and sexual risk behaviour. Gay men were randomised to one of four treatment conditions (CM, CBT, CBT+CM, tailored gay-specific CBT). They found that contingency management and CBT produced concurrent and synergistic effects on depression

and sexual risk behaviour. Importantly for our purposes, the best outcomes were found in the tailored gay-specific group which had the most rapid reductions in methamphetamine use.

Shoptaw et al (2008) compared two GB-specific interventions: a cognitive behavioural therapy and a social support therapy, both adapted as gay-specific programs for substance disorders. In a randomised trial comparing the CBT with the social support therapy, no overall significant differences were found between the two groups on retention, substance use or HIV risk behaviour at follow-up points (6 and 12 months post-treatment). Both groups improved significantly however when the subgroup of methamphetamine users was analysed (ie excluded alcohol and cocaine) the CBT intervention was superior to the social support therapy. This study demonstrates the efficacy of CBT and social support therapy in GB populations, given specifically designed interventions that address gay and bisexual issues for men.

Shoptaw et al (2005) compared four interventions for gay and bisexual male methamphetamine users: cognitive behaviour therapy, contingency management, cognitive behaviour therapy (CBT) plus contingency management, and a gay-specific cognitive behavioural theory. In the case of the last intervention, the focus was on culturally appropriate examples, treatment materials and a focus on HIV risk behaviour. They found better outcomes for the contingency management and contingency management plus CBT compared to the CBT alone conditions (on treatment retention and drug use during treatment). For the gay-specific CBT, there were significantly more reductions in sexual risk behaviour during treatment, but there were no significant outcome differences at 6 and 12 months between the four groups. This lends support for the efficacy of methamphetamine treatment in GB men, but not for the superiority of gay-specific treatment.

Only one study was located which examined GLBT-specific interventions for mental health disorders, and did not include a comparison group of non-GLBT participants. Ross (2007) describe a tailored CBT program for depression, with a focus on the "causes" of depression – internalised homophobia and oppression. They reported positive outcomes from the tailored CBT at 2 months post-treatment (Ross, et al., 2007).

The extent to which self-help is GLBT-sensitive versus specific is difficult to ascertain, but here we have considered it within GLBT-specific because of the existence of self-help groups that are exclusively for GLBT. In NSW, Rainbow Recovery offer space to meet for self-help groups that are GLBT specific. Because many USA substance abuse treatment programs are centred around self-help, AA, NA and 12-step facilitation therapy, there are a number of USA papers on the issue of GLBT and self-help program. Kus (1987) describes the role of AA for gay men in the USA. He notes that gay AA groups have the positive feature of more ready acceptance of the gay person, overt the discussions about feelings of "being different" (page 272); can encourage acceptance of one's homosexuality (reduce internalised homophobia – a putative mechanism for increased alcohol-related problems); and provide important acceptance and social support with a like-minded community. Hall (1994) describes ethnographic research with lesbian women in San Francisco in the early 1990's and their experiences with AA (she describes areas of tension such as extent of assimilation versus differentiation). (Other papers on self-help: Lyons, Chandra, & Goldstein, 2006; Matthews, et al., 2002; Rowan & Faul, 2011).

There is emerging interest in online or internet-based interventions, which have the advantage of ready accessibility and anonymity. We did not locate any published studies on the effectiveness of internet-based interventions for GLBT but note a number of websites which offer GLBT-specific services. These include: the ACON; ReachOUT site for youth: http://au.reachout.com/; beyondblue, not-so-straight: http://www.notsostraight.com.au/links/; gay and lesbian health Victoria: http://www.glhv.org.au/; http://www.qahc.org.au/files/shared/docs/LGBT-

CALD info sheet.pdf; Twenty10: http://www.twenty10.org.au/; and amplifyyourvoice: http://www.amplifyyourvoice.org/youthresource; http://youthnet.mcm.org.au/gay.htm).

5.5 Comparing GLBT-sensitive and GLBT-specific

To date, we have provided descriptions and treatment outcome studies for both GLBT-sensitive and GLBT-specific services. In comparative terms, however, some questions remain: to what extent do GLBT clients prefer GLBT-specific services; to what extent are GLBT clients satisfied with GLBT-specific services; and to what extent are outcomes improved in GLBT-specific compared to GLBT-sensitive services?

Preferences

Some clients demonstrate a strong preference for GLBT-specific services. In a survey of Swiss gay men in relation to quitting smoking, the vast majority nominated that they would prefer to attend a gay-specific smoking cessation program, rather than a generic program (Schwappach, 2009). Matthews et al (2006) found that GLB AOD clients appreciated and valued GLB specific services (with experiences of GLB specific services confined to AA). A now dated survey of NY counsellors in alcohol treatment programs revealed that 13% felt that a GLBT-specific program was appropriate (with 54% nominating internal referral within the agency to a counsellor with specialist GLB skills; and 33% indicating no need for specialist GLB intervention (same treatment as others) (Hellman, et al., 1989). In Australian methamphetamine users, opinions were mixed about GLBT-specific services or not, with 54% indicating a preference for GLBT service providers and 41% not. Likewise, Barbara and Chaim (2004) found that not all GLBT clients want a GLBT service (see also Matthews, et al., 2006). There are reasons why GLBT people may not prefer GLBT-specific services, such as perpetuation of beliefs about 'difference'; or fears of discrimination arising from attending GLBT-specific services (eg: Schwappach, 2009).

Satisfaction

Overall satisfaction with services is another way of assessing extent to which tailored, specific services are required. In the USA, Avery et al., 2001 found that significantly more GLBT clients were dissatisfied with their mental health services (17.6%) compared to non GLBT clients (8%). The authors conclude that this lends support for specifically tailored services, as the MH services appear not to be designed to meet clients' needs (Avery, Hellman, & Sudderth, 2001). However this study did not control for significant demographic differences between the GLBT groups, such as higher education, and white ethnicity. Senreich (2010a) found higher, but not statistically significantly different rates of satisfaction for GB clients in a GB-specific services compared to GB clients in a traditional service.

Treatment outcomes

There are a number of studies which have demonstrated that treatment outcomes do not differ between GLBT-specific interventions and when GLBT people receive standard treatment programs. The study by Peck et al., (2005) reported earlier with methamphetamine dependent gay men did not specifically report whether there were significant differences between the gay-specific intervention and the other three interventions, but it appears that there were not. As noted by the authors: "These findings....suggest that the specific type of structured behavioral or cognitive-behavioral treatment may be of little consequence over the longer term" (page i107). Another study reported earlier regarding the effectiveness of the Community Reinforcement Approach with street youth (Grafsky, et al., 2011) found that sexual orientation was not a

significant variable for drug use outcomes (but GLBT youth improved more on mental health than non GLBT). As the authors note: "Findings suggest that specialized treatments for GLB youth might not be necessary in order to show positive treatment outcomes" (page 573). The study by Shoptaw et al. (2005) reported earlier, with methamphetamine dependent gay men found that there were significantly more reductions in sexual risk behaviour during treatment for the gay-specific CBT, but there were no significant outcome differences at 6 and 12 months between the treatment groups. This suggests that perhaps there are superior within treatment effects for GLBT-specific programs, but that these are not sustained post-treatment.

Australian outcome research (Copeland, Hall, Didcott, & Biggs, 1993) also demonstrated non-significant differences in AOD treatment outcomes between a specialist women's service and a traditional mixed sex treatment program (where 21% of the specialist women clients were lesbians). Notably, both programs significantly reduced drug use, depression and improved overall health.

As noted earlier, (Senreich, 2010b) found that higher levels of honesty and openness about sexuality were associated with GLB-specific services, but this did not translate into better treatment outcomes (abstinence). Indeed, he found that lower levels of honesty at the beginning of treatment were associated with higher end of treatment abstinence (Senreich, 2010b).

On the other hand, some studies demonstrate superior outcomes for GLBT people when in GLBT-specific programs, rather than traditional programs. Research from the PRIDE Institute (cited in Senreich, 2010a) compared outcomes in a GLBT specialised rehabilitation program with those from a traditional rehabilitation program, finding that outcomes were superior in the former. Barbara (2003) argued that GLBT clients are less likely to be retained in non-GLBT specific services. Senreich (2010a) compared three groups of men: gay and bisexual men who had received GB-specific treatment for their AOD problem; gay and bisexual men who received traditional AOD treatment; and a heterosexual group also receiving traditional AOD treatment (all across multiple treatment programs: participants self-nominated which treatment they had received). He found that abstinence outcomes were higher for heterosexual men than for the GB group in traditional treatment. And the abstinence outcomes for the GB group in GB-specific programs were superior to those not in specialised programs. These results did not hold for lesbian women (Senreich, 2010b). The GB clients in the GB-specific program reported a significantly higher sense of therapeutic connection and support from the program than GB clients in the traditional treatment. "When demographic, background, and treatment factors were taken into account in multivariate analyses, the advantages of LGBT specialized treatment were even more apparent" (page 1087). (See also Senreich, 2010b). And as reported earlier, the study by Jaffe et al (2007) with methamphetamine dependent gay men found that the "tailored gay-specific CBT" resulted in the most rapid decline in methamphetamine use, relative to the other non-tailored interventions. This research provides direct evidence that tailored interventions built from existing evidence-based treatments (such as CBT) can produce superior outcomes compared to non-tailored interventions.

ACON prepared a list of GLBT-specific services in NSW, which is provided in Appendix A. The definition of GLBT-specific services was difficult, and some services have been included (with descriptions), such as HIV/AIDS services, which while not self-identified as GLBT-specific, clearly provide specialist services tailored to this population. In other cases services have documented and well-known partnerships with GLBT-services, such as a number of domestic violence agencies. These have also been included, with notes. Noteworthy points from this include:

- There appears to be good provision of GLBT-specific counselling and support services for both AOD and MH.
- There are no GLBT-specific methadone programs nor therapeutic communities, but GLBT-sensitive providers.
- There do not appear to be many services for low prevalence MH disorders such as schizophrenia, and bipolar disorders.
- Many services provide information, support, advocacy and referral.
- It appears that, consistent with the literature (eg Anderson, 1996) it is not feasible for NSW to offer every AOD or MH service type within a GLBT-specific context.
- The range of GLBT-sensitive services, and established networks of referral between GLBT-specific services (such as ACON) and other providers, may go some way to address the needs of GLBT people.

5.6 Conclusion

Prevention is a priority principle with GLBT people; both AOD and MH problems are preventable. Youth are clearly a central target in prevention efforts. Supportive counselling provided during adolescence is likely to substantially reduce the risk of later mental health or substance misuse problems. Social marketing campaigns directed towards healthy lifestyles that have been designed and targeted for the GLBT community have been implemented but there has been little evaluation of the effectiveness of these social marketing campaigns.

Preventing discrimination and stigma is an essential aspect of any comprehensive approach to reducing AOD and MH problems amongst GLBT. The absence of legal and social recognition of same sex relationships is one example of discrimination. There is a small but compelling literature that demonstrates the relationship between recognition of same-sex marriage and improved mental health status and reduced AOD problems. It would appear that measures which reduce the stigma and discrimination against GLBT people are likely to have powerful public health impacts. Institutional reform is another important preventative activity. Workplace and institutional policies regarding harassment and discrimination on the basis of sexual preference is an important part of de-stigmatising GLBT and creating a safe environment for GLBT.

Moving from prevention to treatment, we have outlined the features of GLBT sensitive and GLBT specific services. In the case of the former, all AOD and MH services should be GLBT-sensitive. This entails ensuring an adequately trained workforce, culturally appropriate services and a non-judgemental attitude by all staff across the service. The variety of treatment interventions, such as CBT, motivational interviewing, 12 step programs and the community reinforcement approach have all been shown to be effective with GLBT individuals. GLBT-specific services are those that are specially tailored for GLBT issues. Research has shown some superior outcomes with GLBT-specific services, especially for methamphetamine dependent users. GLBT-specific services provide positive role models, strategies for coping with stigma, tailored interventions for AOD and/or MH and are largely staffed by GLBT practitioners (which is a preference of many GLBT people).

GLBT people appear to access treatment for alcohol problems at a higher rate, even when the higher rate of problem prevalence is accounted for. This is consistent with international research on lesbian/bisexual women. But for gay men and illicit drugs we found little difference in the treatment access rate for GLBT and non GLBT men with drug problems; this is also consistent with international literature. More female GLBT drug users access drug treatment (28%) relative

to non GLBT drug using females (23%), consistent with international literature. For MH services, we found no statistically significant differences in rates of treatment seeking, although the data indicate a trend towards higher MH treatment seeking amongst GLBT groups. International literature shows that MH treatment utilisation is significantly higher amongst GLBT than heterosexual people. There are a number of reasons as to why GLBT may have higher treatment utilisation rates. It is not because they experience more problems – as, in the main, the studies control for those variables. It is possible that GLBT people experience a greater number of stressful, precipitating events that lead them more readily into mental health or AOD treatment. However, we suspect that the factors for higher treatment utilisation may have more to do with the GLBT community. It seems likely that the community norms around help-seeking within the GLBT community are strong. With good social networks and positive norms around help-seeking, a greater number of GLBT people may feel comfortable and supported in seeking health care. Another factor may relate to beliefs about health – a greater sense of the importance of health and well-being. Finally, as alluded to earlier, there is stigma associated with accessing either MH or AOD services – and GLBT people are enormously resilient to stigma – having 'put up with it' across many aspects of their lives. This resilience to stigma may enable them to access treatment at a greater rate than heterosexual people.

The implications of this are obvious – all MH and AOD services should expect to see GLBT people within their services. This is a compelling argument for ensuring that services receive appropriate training and are well placed to provide care to this population group.

GLBT-sensitive services are essentially defined by being open, respectful and welcoming of GLBT clients, demonstrating an absence of discrimination or stigmatising attitudes and behaviours. Strong linkages between GLBT specific services and mainstream MH and AOD services are also required within a GLBT-sensitive service system. There appears to be some work associated with achieving this at 100% coverage of all AOD and MH services. An audit tool used by all services would be useful. It would also require resources to provide education and training in attitudes: the need for a better educated workforce has been documented across different professional groups and different countries. NSW is not alone.

At the same time, there is encouragement from the literature that achieving such a reform of all AOD and MH services may be sufficient. That is, while we can identify specific treatment needs of GLBT, in the main GLBT treatment outcomes are the same as for non-GLBT people, and attention to sexuality-related issues in treatment does not appear to be essential, nor necessarily preferred by clients. The extent to which NSW should provide GLBT-specific services over and above GLBT-sensitive services is difficult to answer. We have reviewed evidence that shows this may not be required, with studies finding no differences when the treatment is specially tailored for GLBT. At the same time, other studies appear to lend support to superior outcomes for some clients in GLBT-specific services.

It appears that a diversity of service types is required. Not all GLBT clients want a GLBT service (Barbara & Chaim, 2004; Matheson, et al., 2010; Matthews, et al., 2006). Others will achieve better treatment outcomes (across both MH and AOD) in the context of a GLBT-specific service. Bonell et al. (2008) argues for both investment in specialised services, as well as funding for non-GLBT services to become GLBT-sensitive.

One of the interesting findings in some studies was that with treatment, GLBT groups actually had higher rates of treatment success than non-GLBT clients. For example in a tobacco control program (Covey, et al., 2009), the GB group had a higher initial abstinence rate than the heterosexual group (although by week 8 the abstinence rates were not significantly different).

Likewise, the Grafsky et al. (2011) study reported earlier found superior outcomes for GLB youth. This suggests a level of resilience in the GLBT population greater than in heterosexual treatment populations. Herrick et al. (2011) explore exactly this point regarding the extent of resilience in these communities, and describe how a therapeutic framework built on a strengths-based approach may be promising (Herrick, et al., 2011); see also Savin-Williams (2001a).

As noted elsewhere, the existing literature does not sufficiently distinguish between gay men and lesbian women: most treatment studies only focussed on one group. Senreich (2010b) did find better outcomes for gay/bisexual men in GLBT-specific services than for gay/bisexual men in non-GLBT services, and this finding did not hold for lesbian women; MacEwan (1994) found less disclosure of homosexuality amongst lesbian women; and gay men to be less positive about group therapy. Both of these studies suggest that there are likely to be important differences between gay men, lesbian women and bisexual people in terms of treatment. Further research on GLBT-specific and GLBT-sensitive services that distinguishes between sub-groups is required.

There was insufficient literature for us to be able to distinguish between treatment for alcohol dependence versus treatment for illicit drug dependencies in GLBT. We note though, that outcomes may differ by drug type for GLBT people, as they do for heterosexual people (see Shoptaw & Frosch, 2000). This is another area for future research.

An Australian review of mental health policies revealed the notable absence of GLBT as a high-risk target group (Carman, Corboz, & Dowsett, 2012). Given the known heightened prevalence of mental health and AOD; and the risk factors, this seems a significant omission. As the authors conclude, "Most major policy documents do not consider this population, and where the needs of this population are recognised, this then does not feed back into national mental health policy" (page 81).

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APPENDIX A: GLBT SPECIFIC MENTAL HEALTH AND/OR ALCOHOL AND OTHER DRUGS SERVICES IN NSW

(as at September 2011. Prepared by ACON)

Organisation	GLBTT MH/AOD services	Eligibility	Location
ACON: NSW's and Australia's largest community-based gay, lesbian, bisexual and transgender (GLBTT) health and HIV/AIDS organisation.	AOD services include: 1. Substance Support Service: one to one counselling, support group, supportive therapies 2. People with MH and AOD comorbidities eligible 3. NSP (GLBTT focused but accessible to all) 4. Information, support and referrals MH services include: 5. Daytime counselling – if AOD are managed and MH issues are moderate 6. Afterhours counselling – eligibility criteria as above 7. Enhanced Primary Care (EPC): access to social worker liaison for GLBTT and/or HIV+ clients with complex health needs 8. Phone counselling and group support for people newly diagnosed with HIV 9. Community Support Network: Home visits and practical support	• Some programs are funded for GLBTT people • Some focus on people affected by HIV/AIDS in general	Surry Hills branch offers all services Lismore service offers 3, 4, 5, 6 and 8 Hunter service offers 1, 2, 3, 4, 5, 6, 8 and 9 Illawarra service offers 3-4 Some phone, print and web-based services provided to people outside those areas

Organisation	GLBTT MH/AOD services	Eligibility	Location
AIDS Dementia & HIV Psychiatry Service (ADAHPS): A state-wide service in NSW that assists in the care and management of people with HIV and complex needs.	MH and AOD issues are addressed through: • Neuropsychological assessment • Brokered care • co-case management • Medical management and HIV psychiatric care • Rest and respite for carers • Telehealth – for rural callers	• People with HIV and complex needs • Staff well-versed in GLBTT client care	Surry Hills
Albion Street Centre: A multidisciplinary centre dealing exclusively with HIV and Hepatitis C clinical management, counselling, research, prevention and education.	• Case conferencing with ACON. • Drug and alcohol-related services • Sexual health services, clinical trials, nutrition, etc.	• People affected by HIV or hepatitis C • Staff well-versed in GLBTT client care due to high GLBTT client load	
Ankali Project (Albion Street Centre): Voluntary provision of emotional and social support to people living with HIV/AIDS.	• Volunteers provide emotional and social support	• People living with HIV/AIDS • Staff/volunteers well-versed in GLBTT client care due to high GLBTT client load	
Bobby Goldsmith Foundation: An AIDS charity that helps people living with HIV (PLHIV) by providing practical, emotional and financial support.	AOD services include: • AOD Integrated Care Programme run in conjunction with The Haymarket Foundation • Provides support to PLWH who have AOD issues as well as other presentations including homelessness, mental health issues, cognitive impairment, medication adherence	• People living with HIV • Staff/volunteers well-versed in GLBTT client care due to high GLBTT client load	Main office in Sydney, with monthly outreach services across NSW

Organisation	GLBTT MH/AOD services	Eligibility	Location
	• Working in partnership with HIV Community Team, Positive Central and ADAHPS • Dedicated caseworker and brokerage services • Access to supported accommodation and ongoing support • Referrals to service partners across NSW including Neami, HACC Services, other mental health services and programmes • Access to financial assistance for medication adherence • Access to an extensive range of financial support options including financial counselling MH services include: 1. Phoenix Programme modules focussing on resilience, depression and anxiety 2. Referrals to other services including ADAHPS, Community Mental Health, Albion Street Centre 3. Help with managing HIV meds - practical and financial 4. Help with financial counselling and management		
Crystal Meth Anonymous: An NA fellowship that specifically addresses crystal meth use.	• 12 step meetings and fellowship	• Based in the GLBTT community, but eligible to anyone with issues with	Surry Hills, Redfern

Organisation	GLBTT MH/AOD services	Eligibility	Location
		crystal meth	
Darlinghurst Community Health Service	• GP and related medical services • Case management	• Non-GLBTT specific, but high GLBTT caseload and staff have specific expertise	Darlinghurst
Darlinghurst Mental Health Crisis Team: Supports and monitors people in times of crisis and offers emergency mental health assessment in the home and in the Emergency Department in the acute phase of their illness.	• 24-hour, seven days a week service used for assessment and treatment of mentally ill people in crisis situations	• Non-GLBTT specific, but high GLBTT caseload and staff have specific expertise	Darlinghurst
Domestic Violence Help Line:	• Phone support and referrals	• Non-GLBTT specific but staff engaged in SSDV interagency and aware of issues	Phone based service
Drug and Alcohol Women's Network (DAWN): Medium term supported housing for women with dependent children in recovery from alcohol and other drugs.	• Accommodation • Case Management • Aftercare through Odyssey House	• Available to women and children • Explicitly welcomes sexual diversity and has links with many GLBTT service providers	Campbelltown
East Sydney Doctors:	• General practice • S100 prescribers • Social worker access via partnership with ACON's EPC Project	• General community • People with HIV • EPC for people with HIV and complex health issues	Darlinghurst
Gay & Lesbian Counselling	• Phone counselling	• GLBTT people	Physically located in

Organisation	GLBTT MH/AOD services	Eligibility	Location
Service of NSW: A volunteer based community service providing free, anonymous and confidential telephone counselling, information and referral services and support groups for gay men, lesbians, bisexual and transgender persons (GLBT) and people in related communities throughout New South Wales (NSW) on sexuality and life issues.	• Women's coming out group • Men's group • GLBT-friendly SMART Recovery group	• People in 'related communities' in NSW on sexuality and life issues	Newtown Phone counselling is state-wide
H2M (St Vincent's Hospital): H2M delivers mental health services to local General Practitioners who have high case loads of People Living With HIV/AIDS (PLWHA) or HCV who have a mental health issue.	• Services delivered by psychiatrist, clinical psychologist and clinical nurse consultant • Assessment • Evidence-based treatments • Recommendations to referrers for mental health problems and drug and alcohol issues • Provides advice and support for clinicians working with such clients	• People living with HIV/AIDS. • Non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care	Darlinghurst
Haymarket Foundation: Provides services to homeless people and other disenfranchised people in the area who have difficulty accessing services from main-stream providers.	• Counselling • NSP • AOD Integrated Care Service: Stabilisation accommodation service run in partnership with Bobby Goldsmith Foundation and ADAHPTS • Brokerage service for homeless people with AOD issues	• Non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care • Some services focus on GLBTT clients • AOD Int. Care Service	Darlinghurst

Organisation	GLBTT MH/AOD services	Eligibility	Location
		eligibility: HIV positive, homeless, current AOD addiction, mental illness and one other complex need	
Headspace: Support and Information for young people who have general health, mental health, alcohol and other drug worries.	• Online information, support and referrals regarding sexuality and gender in relation to mental health • Face to face contact with social workers, psychologists, psychiatrists, nurses, GPs and occupational therapists	• Young people aged 12-25 • GLBTT concerns are specifically promoted and addressed	Gosford, Sydney, Maitland, Wollongong, Coffs Harbour, Mt. Druitt, Bathurst, Wagga Wagga
Holdsworth House General Practitioners	• General practice • S100 prescribers • Social worker access via partnership with ACON's EPC Project	• General community • People with HIV • EPC for people with HIV and complex health issues.	Darlinghurst and Byron Bay
Illawarra Women's Health Centre: A feminist women's health service.	• Lesbian-specific counselling service • A range of women-specific medical and wellbeing services	• All women • Some services are specifically for lesbians and bisexual women	Illawarra area
Inner West Counselling and Therapy: A private counselling practice.	• Counselling around relationships, MH, AOD, sexuality, gender identity, depression, anxiety	• Specifically welcome GLBTT and queer people, but open to all	Newtown and Croydon
Inspire Foundation: An NGO that aims to support young people to lead happier lives.	• Inspire's ReachOut.com website provides online information and support around MH, AOD, and also sexuality and coming out	• Young people • GLBTT concerns are specifically promoted and addressed	Online resource
Kirketon Road Centre:	• Comprehensive medical, counselling and social welfare	• Street-based, "at risk" young	Kings Cross

Organisation	GLBTT MH/AOD services	Eligibility	Location
A primary health care centre offering comprehensive medical, counselling and social welfare services.	service • S100 prescribers • Methadone access and NSP • Outreach services • Services targeting transgender sex workers	people • sex workers • people who inject drugs • Non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care	
Leichhardt Women's Community Health Centre: A community-based, not-for-profit women's health centre providing low-cost medical and complementary health care.	• GPs, nurse clinics, supportive therapies • AOD counselling, MH support • Lesbian health • Women partners of bisexual men service NSW: counselling, groups, workshops, information and support	• Women • Sexuality is specifically promoted and addressed	Leichhardt
LHD Sexual Health Services: Publicly funded sexual health services that provide a range of medical, counselling and health promotion services to those most at risk of HIV/AIDS and sexually transmissible infections.	• Medical, counselling and health promotion services for people at risk of HIV and STIs	• People at risk of HIV transmission and STIs • Some services are specific to MSM	St Leonards - Clinic 16 RPA SH Sydney SH Liverpool SH Parramatta SH Penrith SH
Mardi Gras Medical: Volunteer driven medical support service at New Mardi Gras events.	• Provide acute care at events, which often involves AOD use • Staff are skilled in managing mental health crises	• Attendees of New Mardi Gras events • Non-GLBTT specific but an overwhelmingly GLBTT community-based service	Sydney

Organisation	GLBTT MH/AOD services	Eligibility	Location
Mayumarri: Healing centres run **by** survivors of childhood trauma **for** survivors of childhood trauma.	• 5 day healing retreats – mental wellness as a focus	• Survivors of childhood trauma • Non-GLBTT specific • Staff well-versed in GLBTT care	Lower Hunter Valley
Multicultural HIV & Hep C Service: Works to respond to HIV/AIDS and hepatitis C among culturally and linguistically diverse (CALD) communities, targeting 20 key language groups.	• Multi-lingual fact sheets address information needs of people with BBVs, include information on gay identity and support options	• People from CALD backgrounds affected by HIV or hep C • GLBTT information needs are specifically addressed	National service, primarily online and phone based contact
Positive Life: Works to promote a positive image of people living with and affected by HIV with the aim of eliminating prejudice, isolation, stigmatisation and discrimination.	• Information and targeted referrals • Advocacy around discrimination issues • Peer support and social events for HIV+ MSM	• People living with and affected by HIV • MSM information needs are specifically addressed	Based in Darlinghurst, some services are state-wide
Rainbow Recovery: A meeting place, primarily for gay, lesbian and transgender people, in 12 step programs for recovery from alcoholism, drug and other addictions.	• AA meetings • NA meetings • Sex Addicts Anon meetings • Workaholics Anon meetings • Compulsive Eaters Anon meetings • Debtors Anon meetings • Al-Anon meetings	• 'Primarily' for GLBTT people	Surry Hills: All meetings except NA Darlinghurst: AA and NA East Sydney and Katoomba: AA Newtown: NA

Organisation	GLBTT MH/AOD services	Eligibility	Location
Rainbow G+L Friends NA	• NA meetings	• Gay and lesbian people and their friends	Byron
Relationships Australia: Community-based organisation dedicated to enhancing wellbeing through better relationships.	• Counselling, mediation and education • Advancing knowledge through research and professional development	• Non-GLBTT-specific • Sexuality and gender are listed as issues that the organisation assists with	Phone and email access 20 centres across NSW Sydney centre is trained in sexuality and gender diversity
RPA Sexual Assault Unit	• Hospital-based sexual assault services	• Anyone aged 16+ who is affected by sexual assault • Staff have undertaken GLBTT training and offer a GLBTT-friendly service	Camperdown
RPA Drug Health Services	• Methadone dosing • Assessment and counselling • Mental health comorbidities addressed by psychiatric team	• Non-GLBTT-specific but high GLBTT client load and staff well-versed in GLBTT care	Camperdown
Sacred Heart Hospice and Bereavement Service: A provider of palliative care and rehabilitation services, connected with St. Vincent's Hospital.	• Services include counselling and pastoral care for patients and their family members	• Non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care	Darlinghurst
Service Assisting Male Survivors of Sexual Assault (SAMSSA)	• Face to face and phone based counselling and group support • Mental health and AOD issues explored as an impact of sexual abuse	• Non-GLBTT-specific but staff well-versed in trauma issues for MSM	Face to face services offered from ACT but phone counselling is accessible to NSW men

Organisation	GLBTT MH/AOD services	Eligibility	Location
SESIAH HIV Community Health Team	Outreach services including: • Advocacy, counselling and support groups. • Drug- and alcohol-related services. • Mental health and nursing assessments. • Other social work services.	• Anyone living with or closely affected by HIV-AIDS • Staff well-versed in GLBTT care • Strong partnerships with GLBTT-focussed organisations such as ACON and BGF	South East Sydney
Sex Workers Outreach Project (SWOP): Provides sexual health information and support to people who engage in sex work. The leading sex worker organisation in NSW for HIV, STI and Hepatitis C education and prevention.	• Counselling and support • NSP outreach	• NSW sex workers, management and their clients • Non-GLBTT specific but is a project of ACON and has clear ties to the GLBTT community	A state-wide service with offices in Sydney, Illawarra and Hunter. Outreach services provide broader coverage
SMART Recovery: A voluntary self-help group that assists people in recovering from alcohol, drug use and other addictive behaviours.	• CBT-based support group	• Eligible to anyone with drug use issues and addictive behaviours • Non-GLBTT specific but see note re. Newtown group	Newtown group is facilitated by counsellors with GLBTT expertise
St Vincent's Hospital AOD services (including Stimulant Treatment Program, Gorman House, Rankin Court and ADIS)	• Stimulant Treatment Program (STP): Group support service specifically for both GLBTT people with drug use issues and for STP clients • ADIS: Phone based referrals • Gorman House: Non-medicated detoxification	• STP group targets GLBTT people with AOD issues • Mostly non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care	Darlinghurst

Organisation	GLBTT MH/AOD services	Eligibility	Location
	• Rankin Court: Counselling, OST and case management	• Internal policies in place to support GLBTT access	
Taylor Square Private Clinic	• General practice • S100 prescribers • Social worker access via partnership with ACON's EPC Project	• General community • People with HIV • EPC for people with HIV and complex health issues	Darlinghurst
The Buttery	• Therapeutic community	• Non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care	Northern Rivers
The Deli Women and Children's Centre: Seeks to ensure that women, children and families, particularly those affected by domestic violence, are happy, healthy, safe and resilient; and able to participate in connected and strong families and communities.	• Counselling (General and DV-related) • Supportive groups	• Non-GLBTT-specific but stocks some GLBTT-specific resources	Eastlakes
The Western Suburbs Haven: A charity caring for people living with HIV/AIDS in the Greater West of Sydney. It supports and empowers and cares for people living with HIV/AIDS, their partners, families and carers.	• Respite/convalescent care • Social support • Referrals to other services • Free massage and reflexology treatments	• People with HIV • Non-GLBTT-specific but very high GLBTT client load and staff well-versed in GLBTT care	Blacktown

Organisation	GLBTT MH/AOD services	Eligibility	Location
The Gender Centre: Develops and provides services and activities that enhance the ability of people with gender issues to make informed choices.	• Social support services • Counselling, including around AOD and MH issues • Outreach, including to people in prison	• People with gender issues, as well as their partners, families and friends in New South Wales	Petersham, plus some phone- and web-based services
Tree of Hope: A Catholic Care programme that provides spiritual and emotional support for carers of people living with HIV/AIDS.	• Pastoral and counselling services (including phone counselling) • Group support	• People living with HIV/AIDS • Anyone caring for someone who is living with HIV/AIDS • Welcomes GLBTT people	Surry Hills
Twenty10: Twenty10 is a community based, non-profit state-wide organisation that works with and supports young people of diverse genders, sexes and sexualities, their families and friends.	MH and AOD issues are addressed through: • Case management • Counselling • Drop-in centre • Group activities • Information, referrals, support, advocacy	• Aged 25 years or under • Identify as gay, lesbian bisexual, queer or transgender or are same-sex attracted, gender diverse or intersex	Physically located in Newtown Some phone, print and web-based services provided to people outside those areas
Uplift Psychological Services	• Bulk-billed psychology services • AOD and MH issues addressed • Some clinicians have a specific focus on sexuality issues	• Anyone seeking psychology services	Mascot and Redfern branches have sexuality specialists
Wimlah Specialist DV Service: A Blue Mountains specialist domestic violence service that welcomes any woman, with or without children, regardless of	• Offers an LBT-specific service – SOAAR: Speak Out Against Abuse in Relationships • Offers counselling, accommodation, mentoring, referrals regarding DV	• Explicitly LBT-friendly service	Blue Mountains

Organisation	GLBTT MH/AOD services	Eligibility	Location
her ethnicity, age, sexuality or gender who identifies she is currently escaping or has ever been at risk due to domestic and family violence.	• Addresses AOD and MH in relation to domestic violence		
Women and Girls Emergency Centre: An independent community based service that addresses the needs of homeless women in the Sydney Inner City region.	• Case management for people with AOD and MH issues • Drop in centre • Transgender support project	• Women and girls with housing crises • Some services specifically target transgender women	Surry Hills